

Swainson's thrush: Why a once abundant bird is now hard to find, page 25.

**SPECIAL EDITION:** The Legacy of the Angora Fire

# TAHOE IN DEPTH

*Protecting, Enjoying & Exploring the Lake Tahoe Basin* Summer 2017 ■ Issue #11

## REMEMBERING ANGORA

In the 10 years since Tahoe's worst wildfire, a community continues to rebuild and the lessons we learned continue to resonate

Photo: Tahoe Daily Tribune

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## Forest health continues to be a top priority

Thank you for continuing to support Tahoe In Depth. We've dedicated this issue to the 10-year anniversary of the Angora Fire and we hope you find our coverage compelling of this historic moment for Lake Tahoe. Much has been accomplished in terms of forest health over the last decade. Tahoe Basin agencies came together in an unprecedented way and the results speak for themselves. A 10-year forest fuels reduction strategy is guiding the work of nearly 20 agencies in the Tahoe Basin, resulting in more than 46,000 acres treated for forest ecosystem health since



Angora. Property owners around the Tahoe Basin are building what are known as fire-adapted communities — preparing for the next wildfire to ensure it's not catastrophic. And, TRPA and other environmental agencies have streamlined permitting to support defensible space and forest health projects.

Forest health continues to be a key area in the Lake Tahoe Environmental Improvement Program and more investment is needed. I'm happy to report since our last issue of Tahoe In Depth, Congress reauthorized the Lake Tahoe Restoration

Act. Passage of the Act commits the federal government to the Environmental Improvement Program over the next seven years and forest health is the top funding priority. We're working with our congressional delegation to continue critical federal support for restoration projects that protect our forests, restore lake clarity, fight invasive species, and preserve Lake Tahoe for future generations.

Please send us your feedback on Tahoe In Depth at [tahoeindepth@gmail.com](mailto:tahoeindepth@gmail.com) and share any personal stories about your experiences at the lake you'd like to share with our readers. Enjoy the fabulous Tahoe summer.

### Tahoe In Depth

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**Executive Editor:** Julie Regan

**Managing Editor:** Sarah Underhill

**Design/Copy Editor:** Jim Sloan

**Contributors:** Kurt Althof, Becky Bell, Jeff DeLong, Helen Fillmore, Adam Jensen, Damon Knight, Tom Lotshaw, Jeanne McNamara, Jesse Patterson, Jacob Quinn, Hugh Safford, Ed Smith.

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Photo: U.S. Forest Service

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Photo: Tahoe Daily Tribune

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Photo: League to Save Lake Tahoe

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Photo: Leona Allen

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### The elusive thrush

Swainson's thrush had all but disappeared from Tahoe when Will Richardson heard its distinctive call one day in Ward Canyon. Now the scientist is using both high tech and low tech to find out where the bird is going.



Photo: Will Richardson



# REMEMBERING ANGORA

**On June 24, 2007, an illegal campfire spread into the parched forest just outside South Lake Tahoe. The fire exploded, changing the landscape forever.**

By Jeff DeLong

TAHOE IN DEPTH

**K**it Bailey was decidedly nervous. Lake Tahoe's fire management officer for the U.S. Forest Service knew things were lining up in a worrying way that weekend in late June of 2007. Lake Tahoe's forest was parched and in record dryness for that time of year after a dismal winter for snowfall. Winds were blowing steadily at 20 to 30 mph, gusting up to 50 mph or more. It was a recipe for real trouble.

"I was checking my watch hourly to say we've made it without an ignition," Bailey recalls.

That luck would only last so long.

The calls started rolling in shortly after 2 p.m. There were reports of smoke in the North Upper Truckee area just outside the town limits of South Lake Tahoe.

"I got the call and I remember seeing just a small wisp of smoke," Bailey said.

He quickly contacted Forest Service dispatchers.

"I told them we need to anticipate a very large fire," Bailey said. "There wasn't any guesswork. It was clear we were in for a major event."

And a major event it would be. A decade after Lake Tahoe's largest wildfire erupted on June 24, 2007 — sparked by an abandoned and illegal campfire — the impacts of the Angora Fire continue to resonate. Entire neighborhoods were decimated by wind-driven flames, with 254 homes and structures destroyed in a matter of hours. Lives were changed. A forested landscape was altered for decades, with some 3,100 acres burned.

"It was extreme fire behavior right from the outset," Bailey said. "It was, to use a cliché, the perfect storm."

## 'A hell of a day'

Joe McAvoy and Mike Mosca, a battalion chief and captain with the Lake Valley Fire Protection District, were mountain biking in the hills near Scotts Lake that windy Sunday when they came upon a frightening scene in the valley below.

"We saw a huge plume and there were dark (smoke) trailers coming up with it," McAvoy said. "We knew those were structures. We knew we had a lot of structures burning."

Before long, one of those burning homes would be McAvoy's, reduced to what he described as "nothing but a big pile of rubble."

The two buddies raced down the bike trail to the fire area. They suited up in fire gear, climbed into fire vehicles, and joined a desperate battle.

The sky turned orange as flames raced through kiln-dry timber, jumping from treetop to treetop and from house to house.

"Our district was burning and I had to do something," McAvoy said. "It was a rough day — just to be the lifeguard at the pool when things went bad."

"We couldn't save those homes and that still bothers me," McAvoy said. "But we did the best we could."

"There was no stopping that fire," Mosca said. "That was a hell of a day."

Mosca said it is particularly surprising no one died during the Angora Fire, a fact he and others credited to quick and courageous action by fire first responders and law enforcement officials who evacuated threatened neighborhoods and got residents to safety as the fire quickly spread.



Photo: Tahoe Daily Tribune

*The Angora Fire tore through tinder dry forests, frequently moving through tree tops, making it impossible to control. Only in areas of the forest that had been thinned did the fire burn low enough to the ground for firefighters to battle it effectively.*

As one of the first firefighters on the scene, Lake Valley Battalion Chief Andy Kaufer made the call for evacuations. "I had never seen fire behavior as erratic and intense as this," Kaufer said. "I knew we had to move people out and fast or many of our friends and neighbors could die."

Air tankers and helicopters swooped over the fire but were largely thwarted by high winds and dangerous turbulence, said the Forest Service's Bailey. The decision was quickly made to ground air tankers before a desperate situation became tragic.

"I actually heard an air tanker pilot say 'I need to get out of here before my wings get ripped off,'" Bailey said. "The risk versus gain was a big concern."

Lake Valley and Forest Service firefighters were quickly joined by fire crews from the City of South Lake Tahoe, Tahoe-Douglas Fire Protection District, Cal Fire, and other

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# 2007 blaze illustrated how forests needed thinning

## *Lessons learned from Angora Fire accelerated work to better manage land in the basin*

Continued from page 3

agencies from across the Region.

In the coming days, as the Angora Fire was declared the nation's No. 1 firefighting priority, more than 2,100 personnel would be assigned to the fire. The cost of containing the blaze would swell to about \$13 million. Property damage estimates top \$140 million.

### Fire in our 'back yard'

Also battling the fast-moving blaze was Chris Anthony, now a Cal Fire division chief based in South Tahoe. That first day of the fire, Anthony's priority focused on preventing the fire's spread to a threatened South Tahoe High School. The school was saved, largely by starting another fire to create a buffer between it and the main front of the fire.

"I remember a real sense of relief," Anthony said of the school's survival. "That was huge."

Anthony describes the Angora Fire as unique not only for extreme fire behavior but because of where it burned. He and others at the scene had long experience battling intense wildfires – but not ones burning in their hometown.

"We were fighting a major wildland fire in our back yard," Anthony said. "The homes that were burning down were those of our friends and our families."

"I knew that this area was going to be changed for the rest of my lifetime."

While most of the burned area went up that first day, the Angora Fire proved stubborn even as resources poured into the area. It blew up again on its third day, rocketing toward the Camp Richardson area as water-dumping helicopters struggled to halt its advance.

The Angora Fire was declared contained on July 2 but even as an army of firefighters dispersed from Lake Tahoe, widespread post-fire actions were gearing up.

Experts with the Forest Service and other agencies commenced immediate measures to treat a charred landscape and prevent erosion problems that could imperil the famously clear waters of a precious Lake Tahoe.

Investigators probed the cause of the fire, which was determined to originate at the site of an illegal campfire near Seneca Pond.



Photo: Tahoe Daily Tribune

Two men survey the damage a few days after the Angora Fire.

Years after the fire, officials with the El Dorado County District Attorney's Office said they were looking closely at an individual they believed to be linked to the fire, but no arrest in the case has ever been made.

### Lessons learned

In a report released in August 2007 by the Forest Service, experts came to several important conclusions regarding the nature of the fire and its spread. Among key findings was that dead and dying trees in the Angora Creek watershed, an environmentally sensitive area where forest thinning was not allowed, likely contributed to the fire's rapid spread.

But in neighborhoods where many homes were lost, the report found, flames spread not from burning trees to homes but from home to home, often as embers from one burning structure landed on or near another, setting it ablaze. Lack of adequate defensible space, stacks of firewood piled near homes, dry decks, and fire-vulnerable construction material such as shake roofs were cited as key factors.

Those homes with adequate defensible space were far more likely to be spared, the report found.

Experts also concluded that at some 400 acres of forest in the burn area that had previously been thinned by the Forest Service, the work paid off. There,

the fire changed from a "crown fire" jumping from treetop to treetop to a surface fire, dropping to the ground where flames could be successfully battled by firefighters.

Despite the government's general conclusion that the Angora Fire was largely unstoppable, some critics lashed out at a regulatory environment they said stood in the way of important steps to reduce fire danger around Lake Tahoe.

In response to the fire, California Gov. Arnold Schwarzenegger and Nevada Gov. Jim Gibbons established the California-Nevada Tahoe Basin Fire Commission to study Tahoe's regulatory environment and how it influenced successful fuel reduction and fire protection.

"There was an incredible amount of public concern," recalls Kate Dargan, the former California state fire marshal who co-chaired the fire commission. "Everyone had different views on what could have been done to lessen the impact of that fire."

Some 19 public hearings were conducted over the course of a year, with the panel issuing dozens of different recommendations to provide a "documented path forward," Dargan said. Many recommendations have been put in place over the last decade.

Among the commission's key accomplishments, in Dargan's view,

was improved coordination between California's Lahontan Water Quality Control Board, the Tahoe Regional Planning Agency, and the Tahoe Basin's fire districts. Another key result was collaboration which resulted in long-term funding for forest fuels treatment. Areas where she sees the need for more long-term improvement include homeowners replacing wood shake roofs and enhancing defensible space measures.

### A streamlined process

Of 45 action items specific to TRPA, 41 have been fully implemented, and three partially so. One was deemed infeasible. Funding is the limiting factor for the remaining three.

One key recommendation was streamlining the permit process to remove trees deemed hazardous for fire. TRPA's Governing Board approved a memorandum of understanding with Lake Tahoe's seven fire districts, allowing those districts to issue permits to remove trees for defensible space.

And at the request of Tahoe's fire chiefs, TRPA altered regulations to allow homeowners to remove small trees – those 14 inches in diameter or less – without any permit being necessary. Under previous regulations, a permit was required to cut any tree larger than 6 inches in diameter.

"People could then do 98 percent of what they needed to do without even picking up a phone," said Mike Vollmer, environmental improvement program manager for TRPA.

TRPA also amended regulations to ensure measures to improve erosion control don't conflict with improvements to reduce fire danger.

Rules put in place 25 years before the fire to control logging in the Tahoe Basin needed to be changed, a step made clear by the Angora Fire and by the work of the fire commission, Vollmer said.

And change occurred.

"The Lahontan Water Board and TRPA streamlined permitting without sacrificing environmental safeguards," said Patty Kouyoumdjian, Lahontan's executive officer.

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# How tragedy was a watershed moment for research

*Blaze allowed scientists to prove several theories and improve our understanding of fire*

By **Hugh Safford**  
U.S. FOREST SERVICE

For its size, the Angora Fire was one of the most destructive forest fires in U.S. history. In a few days, it burned hundreds of homes and caused more than \$140 million in losses. The ecological impact was also extreme, with over half of the burn area experiencing complete or nearly complete forest mortality.

Although it was seen as a disaster in the short-term, the Angora Fire was a wake-up call to homeowners, city planners, forest managers, firefighters, and politicians that the threat of extreme wildfire is real, and people can no longer ignore the responsibilities of living in a fire-prone forest.

The Angora Fire was also a boon for fire science and research. It had a wide range of effects on forest and stream ecosystems; the fire area was small and accessible, located near Forest Service and university research institutions; and it was one of the first in the U.S. to burn into a network of pre-fire fuel treatments that were intended to reduce fire severity and protect homes. This resulted in scientists testing theories in a real-world setting.

For example, fire modeling and simple physics suggest that removing surface fuels and smaller trees from forest stands should reduce fire intensity and the loss of adjacent homes. But as of 2007 there had been precious little opportunity to test those theories in the field. The Angora Fire provided a perfect test case, as an extensive series of shaded fuel breaks had been created by the Forest Service over the previous 10 years.



Photo: Lake Valley Fire Protection District

*Studies conducted on the Angora burn area demonstrated the value of forest thinning and other practices that could save lives, homes, and the environment in the future.*

Researchers found that although many homes burned, treated areas burned less severely than untreated areas. A series of studies by the Forest Service and university collaborators between 2008 and 2010 showed strong statistical correlations between forest tree survival, measurements of fire severity, and pre-fire fuel treatments. An internal Forest Service review showed many more homes would have been lost had the fuel break network not existed. These seminal works have been cited in hundreds of scientific studies since, and are foundations of the science that supports forest management in the wildland urban interface where the forest meets neighborhoods.

The death of so many trees in the

Angora Fire footprint led to concerns about carbon loss, and once again the fire proved an excellent natural laboratory.

Since forest thinning and fuel treatments remove carbon from the forest, it was unclear if and under what circumstances the payoff in reduced carbon loss to fire in thinned forests would balance the amount lost to thinning. This question is still not completely resolved, but studies carried out in the Angora Fire (alone and in combination with other fires) showed that treated areas lost much less carbon than untreated areas, and they recovered carbon much more quickly than untreated areas after fire.

Modeling of future vegetation growth also demonstrated that the overall carbon

balance of treatments can be positive compared to untreated forest, especially in those areas of high tree mortality that dominated the Angora Fire and other recent wildfires.

Researchers were also able to test their theories on the effects of embers, or “fire brands,” which caused some homes to catch fire even though they were outside the main path of the Angora Fire.

Laboratory simulations and empirical evidence had demonstrated that fire brands could travel distances of many miles, but the distribution of fire brand sizes and the mechanisms of home ignition were poorly understood. Researchers theorized that very small fire brands could penetrate spaces in otherwise flame-proof materials and ignite flammable surfaces below.

Research after the Angora Fire showed that over 85 percent of fire brands were less than a tenth of an inch in diameter, validating earlier lab results and spurring progress in fire-spread modeling and the development of fire-safe building materials and standards.

A team from U.C. Davis assessed how the fire affected stream hydrology and physical environment, water chemistry, and the composition of aquatic insects, a commonly-used indicator of stream health. Streams rose due to the reduction of water use by trees, and post-fire stream hydrology reflected earlier and faster melting of snow due to the lack of a forest canopy. Stream chemistry was greatly altered by the large inputs of sediment and minerals like nitrogen

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## *Angora Fire illustrated the need for enhanced defensible space, better construction materials*

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### **‘We needed to ... clean it up’**

“What did we learn? The forest needed work. We needed to get in there and clean it up,” said Tim Alameda, the current chief of the Lake Valley Fire Protection District. Alameda was a battalion chief with the Reno Fire Department at the time of the Angora Fire.

Another major lesson from the fire, Alameda said, was the need to alter

construction practices, including halting the use of shake roofs, to make homes less susceptible to wildfire. The need to improve and enhance defensible space practices was another clear message coming from the fire, the chief said.

Changes stemming from the Angora Fire extended far beyond the Tahoe Basin, Alameda said.

“It taught the whole country a lot of lessons,” Alameda said.

Many improvements regarding fire

danger and forest health were being pursued prior to the Angora Fire but the disastrous blaze underlined the need to pick up the pace, said TRPA’s Vollmer.

“One example of work that preceded the Angora Wildfire was a rule change allowing forest thinning in sensitive stream environmental zones,” Vollmer said. “Both TRPA and the Lahontan Water Board took actions in 2004 to support forest thinning in wetlands.”

“We were moving forward but it was

slow,” Vollmer said. “Angora massively accelerated everything that had to be done. It provided the platform for change.

“I think of everything in terms of before and after Angora,” Vollmer said. “And I’m proud of how we’ve pulled together as a community and become a model of cooperation between fire agencies and natural resources organizations.”

*Jeff DeLong is a Lake Tahoe resident and freelance writer specializing in environmental and natural resource issues.*





Photo: Lake Valley Fire Protection District

Firefighters respond to Emerald Fire in 2016.

## Fuel reduction project helped firefighters quell Emerald Fire

The benefit of fuel reduction projects in Lake Tahoe's forests also became clear during the Emerald Fire in October 2016.

Strong winds snapped a healthy tree, knocking down power lines that started the fire on private property near Emerald Bay. The fire quickly spread to 50 acres because of strong winds.

State Route 89 was closed as the first firefighting units arrived on the scene and set up an incident command post at Baldwin Beach. The fire ultimately burned 176 acres.

A fuels-reduction project on National Forest land adjacent to state Route 89 dramatically reduced the intensity and spread of the fire, allowing firefighters to safely engage the south end of the fire adjacent to the Spring Creek Tract and Cascade Properties.

## Sierra in 'fire deficit'

Sue Britting, executive director of Sierra Forest Legacy, an environmental group established in 1996 with the goal of protecting and restoring the Sierra's forests, said past logging put some of the forest's important natural resources at risk. She's hopeful the Lake Tahoe West Restoration Partnership plans restoration that protects all forest resources.

One goal, Britting said, is bringing natural fire back. Fire has been excluded for more than a century at great cost to forest health, and much of the existing forest is overstocked and susceptible to large and explosive wildfires.

"Fire was something that really was beneficial for the landscape," Britting said. "It's true throughout the Sierra Nevada. We've had a fire deficit really since the early 1900s."

Turning that tide could be challenging but is decidedly important, Britting said.

"How do we manage fire so we can use it for the benefit of the forest and do it in a way that's safe and controlled?" she asks.

She sees promise in the partnership.

"We're always looking for new tools, new ways to help us deal with tricky resource problems," Britting said.

# New large-scale approach to forest health

*60,000 acres in Tahoe Basin included in forest restoration project*

By Jeff DeLong

TAHOE IN DEPTH

A rugged swath of forested terrain on Lake Tahoe's West Shore is targeted for an ambitious restoration initiative that could point the way of the future.

In the decade since the Angora Fire rocketed through woods and neighborhoods outside South Lake Tahoe, the bulk of forest restoration work has focused near the wildland-urban interface, the area where the forest abuts residential areas, posing a wildfire threat.

Now, attention is being directed toward more remote areas of Tahoe's forest west of the shoreline with an eye toward restoring the forest on a much broader scale than has been attempted in the past.

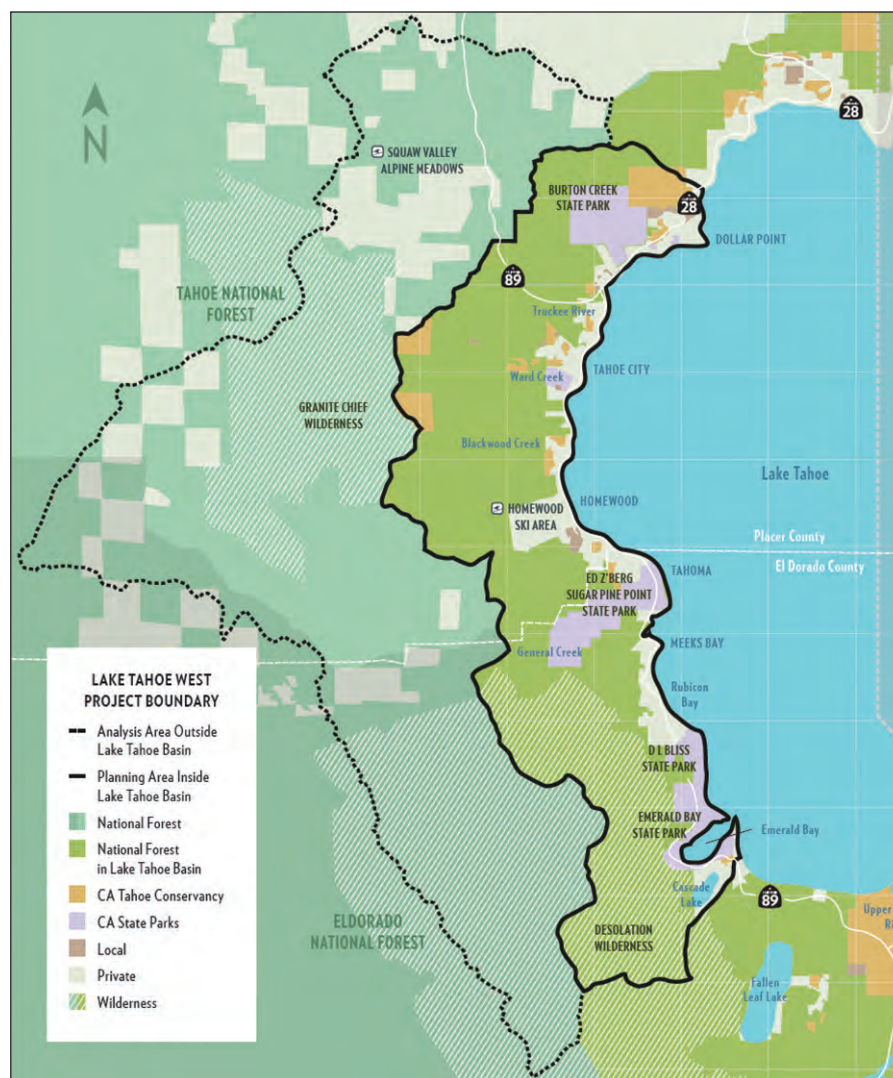
It's called the Lake Tahoe West Restoration Partnership and its goal is to ensure the health and resiliency of the West Shore's forests under the threat of persistent drought, climate change, overstocked stands of timber, wildfire, and a bark beetle epidemic.

"The overall goal of this project focuses on resilience – the capacity of the (forest) system to withstand and recover," said Dorian Fougères, California program manager for the National Forest Foundation.

The nonprofit foundation, established by Congress in 1993 with the goal of restoring and enhancing the nation's 193 million acres of forests and grasslands, is taking a leading role in the process. Local lead agencies are the U.S. Forest Service, California Tahoe Conservancy, Tahoe Regional Planning Agency, California State Parks, Tahoe Fuels and Fire Team, and private property owners, including Homewood Mountain Ski Resort.

The goal, Fougères said, is to tackle forest restoration from a 30,000-foot view, carefully considering interlinking issues affecting the area's forests and watersheds, including air and water quality, wildlife, recreation, and utilization of biomass materials, among others.

The area being analyzed for future restoration projects, including forest thinning and reintroduction of fire with prescribed burning, includes about 60,000 acres in the Tahoe Basin stretching from the shoreline to about 4.5 miles inland, and from Emerald Bay north to Dollar Point near Tahoe City.



But experts are also taking a close look at points farther west – portions of Eldorado and Tahoe national forests and Granite Chief Wilderness, forested terrain with direct connections to affected parts of the Tahoe Basin. In all, some 153,249 acres of forest is being examined through the Lake Tahoe West Restoration Partnership.

"The big distinction from past endeavors is that it's restoring the entire landscape in one piece rather than in many pieces," said Joanne Marchetta, executive director of TRPA and a member of the executive committee for Lake Tahoe West. "You never get to that scale if you do it in 1,000 or 2,000 acres at a time. We are recognizing the benefits of a larger scale rather than by just going piece by piece."

"It's trying to look at the landscape in a holistic fashion," agreed Randy Striplin, fire ecologist for the Forest Service's Lake Tahoe Basin Management Unit. "I think

folks are recognizing this is the wave of the future."

In fact, it is. According to the Lincoln Institute of Land Policy, more than 200 examples of large landscape conservation initiatives were documented in a 2010 policy paper. Collaboration across multiple jurisdictions is pervasive throughout North America.

Lake Tahoe West participants are now in the process of agreeing on what resilient forests and watersheds should look like up to 100 years in the future and which areas are now most "out of whack" from desired resilient conditions.

Next, experts will seek to determine which areas would yield the most benefits from restoration, as well as where the greatest barriers to desired conditions exist. The goal is to have the program approved by the federal government by early 2020, with project implementation commencing a few years after.



# Restoration work involved erosion control, tree planting

*After dangerous trees were removed, work focused on rehabilitating damaged meadows and streams*

By Jeff DeLong

TAHOE IN DEPTH

Before the smoke of the Angora Fire had cleared, forest experts were gearing up to restore a charred landscape and protect a sensitive Lake Tahoe environment.

Officials from around the country converged to determine the most immediate steps necessary to prevent damaging erosion and protect the public from inherent hazards present in the burn area. Later, long-term plans would be laid to treat damaged terrain and put it on a path to long-term recovery.

It's a goal pursued at the site of most any wildfire but one that was significantly complicated by the special conditions present at Lake Tahoe.

"It was basically starting over," Rita Mustatia, forest silviculturist for the U.S. Forest Service's Lake Tahoe Basin Management Unit, said of restoring a fire-blasted forest.

"Having a future healthy forest was the primary goal," Mustatia said.

Burning some 3,100 acres, the Angora Fire was the largest fire to hit the Lake Tahoe Basin in modern history. The fire blasted through the sensitive watershed of Angora Creek. It raced up the steep slopes of Angora Ridge. In places, the fire burned with high intensity and every tree was killed. In others — particularly where the forest had previously been thinned by the Forest Service — many survived.

The affected landscape offered a checkerboard of issues and challenges.

One key concern was that summer storms could flush ash and sediment from burned slopes into Angora Creek, the Upper Truckee River and ultimately, Lake Tahoe. Such material would be rich in nutrients fueling algae growth in the lake, helping to rob its famed clarity.

"Water quality was a huge concern," Mustatia said.

Even as the fire was contained in early July, the Forest Service's Burned Area Emergency Response (BAER) Team gathered to begin planning initial steps needed in the burn area, many of them designed to prevent erosion and damage to water quality. In the weeks and months after the fire, teams installed erosion-control measures such as water bars and



Photos: U.S. Forest Service



*Immediately after the Angora Fire, the U.S. Forest Service's Burned Area Emergency Response Team began planning how to control erosion. The restoration work involved removing dangerous trees (left) and working with the public on replanting the burned area (above). Erosion was held back, creeks and meadows were treated and restored, and a variety of trees were planted to replace the ones that burned down.*

straw wattles. Soil in the burn area was covered in mulch, some of it sprayed by a squadron of swooping airplanes.

"There was a lot of interest in how the fire was going to impact not only the streams that ran through the fire area but the lake itself," said Stephanie Heller, a Forest Service hydrologist and BAER Team coordinator. "Erosion is always a concern and a fire increases the potential for erosion."

During those early days after the fire, Heller recalls challenges posed by Tahoe's unique regulatory environment, with multiple agencies and jurisdictions involved, each with their own responsibilities.

"One of our biggest challenges was the political landscape," Heller said.

Paying close attention to the situation

were scientists from Reno's Desert Research Institute (DRI) and U.C. Davis. They were concerned about a potential repeat of the 2002 Gondola Fire, when post-fire storms washed a substantial amount of pollutants into Lake Tahoe.

Monitoring stations were quickly installed in Angora Creek and other locations, said Alan Heyvaert, director of the Center for Watersheds and Environmental Sustainability at DRI.

"There was high potential some thunderstorms would come shortly after the fire and that could cause a lot of erosion," Heyvaert said.

That erosion didn't occur, a fact Heyvaert attributes to quickly installed erosion-control measures and the fortunate coincidence that no major thunderstorms occurred directly over

the burn area during the summer of 2007. While monitoring did indicate a slight impact over several years after the fire, Lake Tahoe escaped any major ones, Heyvaert said.

"That turned out to be really fortunate for Lake Tahoe," he said.

Long-term measures to improve hydrology in the burn area included the restoration of a 1,200-foot stretch of the Angora Creek floodplain as well as the restoration of Gardner Meadow near Camp Richardson. At Seneca Pond, a party spot where an illegal campfire started the Angora Fire, the Forest Service removed the pond's dam and restored the area to a natural wetland, with work there completed in 2015.

"I feel good about the work we completed," Heller said. "We've restored the streams and set them on a trajectory to long-term recovery."

In the forest, initial work concentrated on removing burned trees that posed a hazard to the public, particularly near roads and trails. Teams completed initial removal in that area in October 2007, with hazard trees removed from another 256 acres by 2010.

Thinning occurred within nearly 1,200 acres of forest to improve forest health and reduce future fire danger.

Teams planted new trees with the idea of restoring a diverse forest. Before the fire, the forest was a tinderbox largely composed of white fir and Jeffrey pine. New trees planted through the restoration project included a broader mix, including aspen, red fir, sugar pine, and incense cedar. More than 500 acres was reforested, as were 220 acres of urban lots.

"We planted a variety of trees focusing on what we thought was appropriate for the area," Mustatia said. "We've got quite the mosaic out there. It's really what we wanted."

Returning the forest in the Angora Fire area will take years, indeed decades, but improvements made since the blaze started that process, Mustatia said.

"It was very successful," Mustatia said. "Going out and looking over the area now, the vegetation is growing back, the seedlings are doing well."

"It's really coming back very nicely."



## What is a fire adapted community?

It is a community in a fire-prone area that requires little assistance from firefighters during a wildfire. Residents accept responsibility for living in a high-fire-hazard area and work together as a neighborhood to reduce their wildfire risk. They take actions to prepare themselves, their properties, and their environment for wildfire, and have the knowledge and skills to evacuate early, safely, and effectively.

Wildfires play an important role in the forests of the Sierra Nevada. By taking steps to create fire-adapted communities, fires can fulfill their important role in the forest without having disastrous effects for communities.

## Steps to take today

**Make an evacuation plan:** Know how to communicate with friends and family if there is no cell phone service. Know who is in charge of pet safety and have a safe location to meet. Know the best routes out of your home and community.

**Have a toolkit:** Have evacuation items ready. Include valuable personal heirlooms, important documents, food, water, and extra clothing.

**Know your risk:** Get a defensible space inspection from your fire protection district to learn how to protect your home and firefighters.

**Get defensive:** Create defensible space within 100 feet of your home or to your property line.

**Choose the right landscaping:** Use native or low-flammability plant species and keep them well irrigated and properly spaced.

**Communicate:** Talk to neighbors and learn who needs help with defensible space or evacuation.

**Stay informed:** Know local fire restrictions and stay up to date on local wildfire information.

**Be a leader:** Volunteer as a Tahoe Network of Fire Adapted Communities liaison for your neighborhood and help your neighbors stay up to date on wildfire issues.

**Think First to Keep Tahoe Fire Safe:** Learn more about wildfire prevention and preparedness and sign the pledge at [www.ThinkFirstTahoe.org](http://www.ThinkFirstTahoe.org) to help keep Lake Tahoe and its communities safe. More tips at [www.Tahoe.LivingWithFire.info](http://www.Tahoe.LivingWithFire.info)

## ‘Ready for Wildfire’ app

CAL FIRE’s new Ready for Wildfire app puts step-by-step checklists for wildfire preparedness in the hands of users, allowing homeowners to track their progress creating defensible space, fortifying their homes with fire-resistant construction, assembling an emergency supply kit, or creating a family communication and evacuation plan. The app also allows users to receive critical wildfire alerts. To download the app, visit the App store or Google Play Store, search for CAL FIRE, and install.

# Network helps neighborhoods prepare

*Fire adapted communities know how to protect homes, survive wildfires*

By Tom Lotshaw  
TAHOE REGIONAL PLANNING AGENCY

The time to prevent and prepare for Lake Tahoe’s next wildfire is now, before it’s burning.

Nearly 90 percent of wildfires reported each year at Lake Tahoe are human caused and preventable with some precautions.

Firefighters quickly put out most of the fires. But as the Angora Fire in 2007 and the Gondola Fire in 2002 showed, campfires or even carelessly tossed cigarettes can cause fires that quickly burn out of control with the right conditions.

People recreating at Lake Tahoe need to be especially careful not to start wildfires.

That means not smoking in areas with dry vegetation, not using fireworks (which are largely illegal at Lake Tahoe), and not using portable charcoal grills because of the risk hot ashes pose.

It also means having campfires only where and when they are allowed. If you have a campfire, keep a bucket of water nearby, keep an eye on the fire, and thoroughly extinguish the fire before going to sleep or on a hike.

Lake Tahoe residents can take important steps to prepare their homes for wildfire, such as join the Tahoe Network of Fire Adapted Communities program led by the Tahoe Resource Conservation District and Tahoe Fire and Fuels Team. Interested residents can learn more at [tahoeircd.org/fireadaptedcommunities](http://tahoeircd.org/fireadaptedcommunities).

The new program is working to



Photo: Tahoe Daily Tribune

*The Tahoe Network of Fire Adapted Communities connects homeowners and helps them prepare for wildfire by creating defensible space on a neighborhood level.*

connect neighbors and fire protection districts so everyone can work together to create fire-adapted communities that are as prepared as possible for the next wildfire.

Homeowners should rake up pine needles each spring, store flammable materials like firewood away from their home, and trim low-hanging tree branches so fires have a harder time spreading from the ground to the tree tops.

Property owners can also contact their local fire district to schedule a defensible space inspection. Proper management of vegetation around a home significantly reduces the wildfire threat. TRPA rules allow property owners to remove a tree up to 14 inches without a permit

and trim lower branches for defensible space.

People working on a home renovation or a new home project should incorporate fire-resistant building materials as much as possible.

Communities must also be ready to evacuate. Sign up for emergency notifications from your city or county. Know where to go for reliable, accurate information during an emergency. Have a plan to evacuate with needed items as quickly as possible.

The time to prepare is now, before the next wildfire is burning. It’s not a question of if Lake Tahoe will have another wildfire, but when.

*Tom Lotshaw is the public information officer for the Tahoe Regional Planning Agency.*

## Major recent human-caused fires in the Tahoe area

### Washoe Fire: January 2012

Careless disposal of hot fireplace ashes sparked the Washoe Drive Fire south of Reno. Fanned by gale force winds, the fire destroyed 29 homes, forced nearly 10,000 people to evacuate, and burned 3,200 acres.

### Waterfall Fire: July 2004

An abandoned campfire in Kings Canyon started the Waterfall Fire in hills west of Carson City. From July 14 to July 20, the fire burned 8,700 acres. Nearly two dozen personnel were entrapped and burned

over by the fire. Two people, a firefighter and a news reporter, needed first aid for second degree burns. The fire damaged or destroyed 31 homes and three businesses.

### Gondola Fire: July 2002

A cigarette tossed from a Heavenly Gondola window sparked the Gondola Fire in California just two days before the July 4 holiday. Fire trucks, air tankers, helicopters, and more than a thousand firefighters deployed to fight the wildfire and protect homes and businesses. The fire burned more than 600 acres. No structures were

damaged and no people were injured. Burn scars from the fire remain highly visible on the mountains overlooking the casinos in Stateline.

### Martis Fire: June 2001

A campfire at a campsite east of Truckee jumped its fire stone ring. The resulting fire burned more than 14,000 acres in the Truckee River Canyon. More than 3,000 firefighters responded to the fire, which took a week-and-a-half to suppress. It destroyed a mobile home, a cabin, and three vehicles, and shut down Interstate 80 and a rail line.



# Tahoe Forest Stewardship Day set for burn area

*Sept. 23 event to focus on the work needed to restore scarred landscape*

**Jesse Patterson**

LEAGUE TO SAVE LAKE TAHOE

While the community came together to support neighbors who lost homes in the Angora Fire, it also rallied to help restore the forest habitat that was lost.

In September 2007, just months after firefighters brought the Angora Fire to an end, hundreds of community members gathered at the site of the burn for the already-established annual Tahoe Forest Stewardship Day. Holding the annual restoration event at the Angora burn area provided an opportunity not just for critically needed environmental restoration but for community restoration as well. The League to Save Lake Tahoe, the U.S. Forest Service, the California Tahoe Conservancy, TRPA, and many other partners brought the restoration event back to the Angora burn area in 2008. At both years' events, volunteers planted young trees and spread seeds of native plants.

Successful environmental restoration requires repeat visits to damaged areas and years of dedicated hard work. In partnership with the Forest Service, the League hosted Tahoe Forest Stewardship Day back at the Angora burn area in 2016 to make sure restoration was effective. Community members gathered once again, thinning brush to provide sunlight to young trees planted during the first few years after the burn and restoring trails to allow residents and visitors to better access and enjoy the area.

"Angora was a fire that affected the entire community," said Paul Guarnaccia, a forester with the U.S. Forest Service's Lake Tahoe Basin Management Unit. "The burn scar is something people see every day. It's still important to have the community that was affected by the fire have a role in the process of restoring the area."

In 2017, the League and the Forest Service will return to the Angora burn area to coordinate additional volunteer restoration. The Sept. 23 event will be the 20th annual Tahoe Forest Stewardship Day. Financial support is provided by a grant from the U.S. Forest Service, El Dorado County Resource Advisory Committee.



Photo: Peter Spain

*After the fire, hundreds of volunteers turned out to help restore the Angora burn area (top photo). Volunteers returned nine years later (below) to the same area to thin brush and restore trails to the burned area. Work will continue this September with Tahoe Forest Stewardship Day.*



Bottom photos: League to Save Lake Tahoe



All ages can participate in these restoration events, and no prior experience is needed.

"Everyone is welcome to participate," said Marilee Movius, the League's community engagement manager. "This is a great opportunity to get involved and not only make a valuable difference in restoring the sensitive burn area, but also to learn about the value of forest health."

Healthy forests are essential for the ecological well-being of Lake Tahoe.

Forests, meadows, and wetlands act as natural pollution filters and capture fine sediment that can degrade Lake Tahoe's legendary clarity. Decades of unchecked development was built over much of the sensitive lands in Tahoe, making it all the more important to hasten the healing process for the thousands of acres damaged in 2007.

"Not only are we looking to restore the natural area but also to restore the community that was affected," said Guarnaccia.

The 20th annual Tahoe Forest Stewardship Day in September will be a celebration of community and restoration, showing that with good friends and partners, the Tahoe community comes together to care for our environment and our neighbors. To learn more about these restoration events and how you can get involved, visit [keeptahoeblue.org](http://keeptahoeblue.org).

*Jesse Patterson is the deputy director of the League to Save Lake Tahoe.*



## Elwood Miller to retire from work with fire issues

By Ed Smith

After a lengthy career of addressing Nevada and Lake Tahoe Basin forestry and fire issues, Elwood Miller announced his retirement as coordinator of the University of Nevada Cooperative Extension's Nevada Network of Fire Adapted Communities. This will be his third attempt at retirement.



Miller

Miller has been a professional forester for over 40 years. His career spans timber management and fire suppression positions with the U.S. Forest Service and 30 years as a professor of forestry and administrator with the University of Nevada, Reno. He retired from the university in 2001 as dean of the College of Human Resources and Family Sciences.

In January 2002, he became the founding executive director of the Nevada Fire Safe Council, a position he held until March 2005. He helped wildland urban interface communities increase their survivability to wildfire. He also served as Extension's coordinator of the Nevada Network of Fire Adapted Communities and was the first operations manager for the Tahoe Fire and Fuels Team. He also supported the Tahoe Resource Conservation District's Tahoe Network of Fire Adapted Communities.

Mike Vollmer, TRPA's environmental improvement manager, said the Tahoe Basin owes Miller a great debt for his contributions.

"The Tahoe Fire and Fuels Team concept was his," Vollmer said. "If ever there was a need for a voice of reason ... Elwood was the go-to guy."

Forest Schafer, chairman of the Tahoe Fire and Fuels Team, called Miller a "visionary."

"He's a mentor and leader ... but his intensity and wisdom is tempered by calm humility."

"He is passionate and genuinely concerned about the safety and well-being of Lake Tahoe communities," added Mary Beth Donahoe, Fire Adapted Communities program coordinator with the Tahoe Resource Conservation District. "His experience, intellect, dedication, and openness are admired. It will be sad to see him retire, however, I am grateful I have had an opportunity to learn from and work with him so closely over the past two years."

Vollmer summarized Miller's influence, "If the team members were the Jedi Knights from Star Wars, Elwood would be Yoda."

*Ed Smith is a natural resource specialist with the University of Nevada Cooperative Extension and co-manager of the Living With Fire Program.*

# Remote cameras help limit wildfires



Photo: Mike Vollmer, Tahoe Regional Planning Agency

*In the last half of 2016, 28 fires were spotted and monitored through the AlertTahoe system.*

## Group raising money to expand AlertTahoe fire-spotting service

By Jim Sloan

TAHOE IN DEPTH

Last October, a fire broke out in the middle of the night on the tinder-dry ridge above Emerald Bay, quickly spreading to nearly 200 acres and threatening homes in Spring Creek and nearby Cascade Lake.

Luckily, the blaze was spotted by remote cameras that are part of the AlertTahoe system. Firefighters were able to locate the fire and get it surrounded before it could do the same kind of damage caused by the Angora Fire.

The fact that the Emerald Fire was the only blaze in the Tahoe Basin that grew larger than 3 acres last year is testament to the growing effectiveness of the AlertTahoe system. The system has 30 cameras — including five in the basin — on mountaintops throughout the Region.

From July to December 2016, 28 fires were spotted through the AlertTahoe system, giving firefighters a jump on the blazes before they could spread. Most of those blazes were suppressed before they exceeded 1 to 2 acres.

The year before, the system, deployed by the University of Nevada Seismological Laboratory, also proved invaluable when a dry lightning storm swept over the basin, sparking several fires. The cameras allowed firefighting monitors to spot and precisely locate the lightning strikes, giving firefighting crews a chance to douse any blazes before they got out of hand.

Now the seismological laboratory, with

the help of the Tahoe Prosperity Center (TPC), is hoping to add seven more cameras in the Tahoe Basin. Five have been successfully funded and will be installed this spring. The goal of the TPC is to raise \$250,000 for two more cameras and yearly network maintenance to ensure the 12 cameras in the Tahoe Basin keep our communities protected.

"The camera system can mitigate many of the catastrophic fires by enabling a more rapid response by firefighters," said Dr. Graham Kent, director of the seismological lab in the university's College of Science.

"We have already seen the benefit of early intelligence to enable a faster turnaround on evacuations, resource management, and fire-suppression response. The system can also help manage prescribed burns."

TPC took on fundraising as a way to protect the region's environmental and economic qualities. The TPC works to ensure a sustainable and healthy Tahoe Basin, and CEO Heidi Hill Drum said the system can help prevent another Angora Fire.

"The Tahoe Prosperity Center supports this program because it makes sense. It protects our environment, our economy, and our community by preventing major wildfires in the Tahoe Basin," Drum said.

The AlertTahoe project was initially the brainchild of a group of students from Meadow Vista, California, who proposed

seeding the forest with wireless, Internet-connected cameras. In 2009, the students won the Innovate Award at the Children's Climate Action in Copenhagen, and worked with the seismology lab and Sony Europe on a prototype system.

The students envisioned an online system in which citizens could check the cameras or make the image feed the screensavers on their computers — creating a network of fire watchers looking for pillars of smoke. The public today has access to the streaming camera images, which can be panned and tilted by government and firefighting officials.

According to the seismology lab, the AlertTahoe system is made possible by using high-bandwidth microwave links to transmit high-definition images and near real-time seismic data. Data arrive within seconds to one of its data centers and is available for processing and distribution to the public. The lab's plan for the Tahoe-Truckee corridor, Sierra west slope, and Reno-Carson corridor includes about 30 fire cameras, new and upgraded seismic stations, and new radio access points to transmit data to its UNR-hosted headquarters.

To find out more and see these cameras in action, go to [tahoeprosperity.org/alerttahoe](http://tahoeprosperity.org/alerttahoe). The TPC also works on expanding high-speed Internet and cell coverage, revitalizing Tahoe Basin towns, improving job opportunities, and diversifying the area's economy.



# Work begins on trails at Fallen Leaf, Angora Ridge

*6-mile path will create a route along Angora Ridge and North Upper Truckee area*

By Jacob Quinn

U.S. FOREST SERVICE

Spring arrives in the Tahoe Basin with a buzz of anticipation, energy, and activity. This spring, the buzz may be a slightly softer, low hum of activity as our incredible snowpack slowly melts and makes its way to our steadily rising lake. Make no mistake, though, that buzz of activity is coming in the form of a project to build and reconstruct trails.

A key project, which will create new trail connections from our communities and neighborhoods to the Fallen Leaf Lake and Angora Ridge areas, began this spring. New trail loops being developed will allow trail users to experience incredible vistas from Angora Ridge. Trails that were lost in the devastating Angora Fire 10 years ago will be rebuilt.

The project is a collaboration between the U.S. Forest Service Lake Tahoe Basin Management Unit (LTBMU), American Conservation Experience (ACE), and Tahoe Area Mountain Biking Association (TAMBA). The work will help solidify the Tahoe Basin's reputation as a world-class single-track destination.

"This project is part of larger initiatives by the Forest Service to implement landscape-scale recreation and forest-health improvements," said Jeff Marsolais, LTBMU forest supervisor. "It also provides key trail connections in the area and physically ties together a multi-year effort of trail planning, construction, and reconstruction."

Work planned for 2017 includes approximately 6 miles of trail construction, which will create a path along Angora Ridge with connections to North Upper Truckee neighborhoods and to Fallen Leaf Campground.

"Currently, there is no way to access these areas that doesn't involve driving a vehicle or walking or biking on narrow, paved roads with very limited shoulders," said Mike Gabor, engineer with the LTBMU. "The new trails will create a different experience for people by allowing them to step away from their vehicles, move off the pavement, and spend time in undeveloped places."

Building on the successes of past projects, such as the Kingsbury Stinger and Corral trails, this project will utilize professional crews for the initial trail



A crew member works on a new trail near the Angora Fire burn area.

construction and provide a rough product that will need to be shaped and finished by community volunteers.

"Besides providing more amazing trails in Tahoe and connecting these trail networks, I think the continued partnership between the Forest Service and TAMBA is something to be celebrated and shared as a model for others working to get projects accomplished," TAMBA president Ben Fish said. "This approach creates stewardship and investment in the trail system for the community, which leads to long-term success for the project."

Patrick Parsel, national trails coordinator and trainer for ACE, said the work helps shape his crew members' understanding of conservation and community service.

"It's a powerful experience for our corps members to work on a project like this," he said.

Many former corps members have gone on to work for the Forest Service at Tahoe and a number of other agencies and conservation organizations across the nation. Many cite their experience with ACE as a key factor in choosing their careers in resource management and conservation, Parsel said.

"Our intent is to consider trail networks as a whole in our planning,

looking at how they connect to important landscape features, to other trails, and to the community," Gabor said. "This approach results in a host of approved, shovel-ready projects that we can then engage our partners on and develop creative ways to implement."

As with past projects, TAMBA heard the call and began fundraising in spring of 2016, hosting several parties, speaker events, and concerts. The results exceeded their fundraising goals.

"We've been so impressed by the support for this project from the community," Fish said. "The funds raised so far will ensure this project's success and will likely even get us ahead of schedule for construction."

This spring and summer, the hum of activity will transform into a buzz that will involve the entire community. Whether signing up as a volunteer, supporting TAMBA, or simply offering a smile and a wave to the hard-working crews building trails when out exploring the area this season, all are welcome and encouraged to participate.

For more information about the project, visit [www.tamba.org](http://www.tamba.org) or [www.fs.usda.gov/goto/lbmu/FallenLeafLakeATM](http://www.fs.usda.gov/goto/lbmu/FallenLeafLakeATM).

*Jacob Quinn is the trails engineer for the U.S. Forest Service Lake Tahoe Basin Management Unit.*

“

*There is opportunity to be involved in every way. And these projects only get better and better as more community members know about them and participate however they can.*

”

**Ben Fish**  
TAMBA President



# Fire ‘really woke people up’ to forest conditions

*Tree thinning had already started, but work accelerated after Angora exposed danger*

By Jeff DeLong

TAHOE IN DEPTH

In many ways, the Angora Fire was a long time coming.

For more than a century, Lake Tahoe’s forests had been ailing and ready to burn due to human-induced changes.

They had been clear cut by pioneering loggers, with the forests that returned lacking natural diversity and susceptible to drought and assault from insects.

Fire, which plays a vital role in a natural forest ecosystem, was excluded for decades. Any fires that did start were quickly extinguished, leading to ever-thickening, and increasingly unhealthy, forest conditions.

It all added up to a situation ripe for the type of blaze that blasted through the drainage of Angora Creek and spread to vulnerable neighborhoods that windy afternoon of June 24, 2007.

Steps were already underway to address unhealthy forest conditions when the Angora Fire started – many of them encouraged and funded in the wake of the Lake Tahoe presidential summit convened by then-President Bill Clinton a decade before.

But the Angora Fire, beyond a doubt, served as a vital catalyst to ramp up forest health initiatives and reduce the threat of wildfire in the Tahoe Basin.

“To some degree, the public perception was that (a major fire) couldn’t happen here,” said Brian Garrett, urban forest program manager with the U.S. Forest Service’s Lake Tahoe Basin Management Unit. “We’ve seen now it can happen.

“I think Angora really woke people up to the large risk we have at Lake Tahoe,” Garrett said.

The origin of that risk dates to the Comstock era of the late 1800s when Tahoe’s forests – previously composed of a rich variety of conifer trees of varying age – was clear cut to provide wood to shore up busy gold and silver mines in Virginia City. The forest did grow back, but it was largely composed of even-aged white fir trees.

Fires are particularly vulnerable to drought and bark beetle attacks, and that’s exactly what happened on the heels of a lengthy drought that withered Tahoe’s forests in the late 1980s and early 1990s. A widespread bark beetle



Photo: Tahoe Daily Tribune

*Efforts to drop water and fire retardant were often stymied by dangerously high winds.*

infestation killed one out of three trees in places, with some pockets of forest experiencing a mortality rate of up to 80 or 90 percent.

“The Lake Tahoe Basin was in pretty bad shape,” Garrett said. “There was widespread tree mortality all over the Tahoe Basin and there was really no funding to address the situation appropriately.”

Following the 1997 presidential summit and the funding that came from it, momentum built steadily when it came to the task of improving forest health and reducing the associated fire danger.

More than 69,500 acres has been thinned or otherwise treated over the last 20 years at a cost of over \$66.5 million. The bulk of that work, on more than 48,000 acres, occurred since 2007 – testament to the influence of the Angora Fire.

That fire also clearly demonstrated the value of effective forest treatment. In parts of the burn area previously treated by the Forest Service, fire behavior changed dramatically, with flames dropping from the treetops to the ground where firefighters could effectively battle the blaze.

“To this day you can almost draw a line and look at the treated and untreated areas there,” said Kit Bailey, the Forest Service’s fire management officer for Lake Tahoe. “If those hadn’t been in place we would have had a much larger area to deal with in terms of structure loss.”

The tragedy that was the Angora Fire did lead to positive changes, including stepped-up initiatives to improve forest health and resilience, Bailey said.

“If you can take a negative and make it a positive, this is an example of that,” Bailey said. “We’re making a significant

“  
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”  
**Brian Garrett**  
Urban Forest Program Manager  
U.S. Forest Service

difference for sure and we’ve seen it over and over during the last 10 years.”

The danger is only increasing as the climate warms, making forests at Tahoe and throughout the Sierra more susceptible to large, explosive wildfires. The massive Rim Fire, a so-called megafire that burned more than 400 square miles in and near Yosemite National Park in 2013, and the King Fire, which burned another 151 square miles west of Lake Tahoe in 2014, point to the growing risk.

“It’s staring us in the face,” said Chris Anthony, a Lake Tahoe-based division chief for Cal Fire. “We’re seeing these massive fires occurring. The factors that play into it are drought, declining snowpack, and increasing temperatures. All those factors play into a changing environment and we have to react and adapt.”



# A garden grows at the site of photographer's lost home

*Man who lost his vast collection of wildflower images started a garden rather than rebuild house*

By Tom Lotshaw

TAHOE REGIONAL PLANNING AGENCY

Nearly everyone who rebuilt their home after the Angora Fire has a story about what they found in the ashes. One family didn't find what it was looking for in the ashes, but in what grew out of them.

Owen Evans spent decades photographing wildflowers. The photos were stored on thousands of glass slides in his home on Mount Olympia Circle. "That was his passion," said Leona Allen, his daughter. "He had all those glass slides, so other people would call him and get his slides for presentations and books. He had photos of wildflowers from the majority of the Western states. I'm pretty sure he had every flower in the Sierra Nevada. There were thousands of slides."

When the Angora Fire started burning, Evans went outside to wet down his house and yard with the hose. But soon his house was surrounded by trees and other homes on fire. He was evacuated by Leona Allen's husband, a police officer, with nothing but the clothes on his back and his wallet.

The fire destroyed his house and everything inside, including the glass slides. No trace of the slides was ever found.

"When the insurance company came, the lady spent three days going through the contents of his house. He was talking about this and that. When he got to the slides, she

*It was the first and only time I saw him cry after the fire. ...*

*“(The slides) were his life’s work and enjoyment. It all went up in the fire.”*

— Leona Allen



Members of the California Conservation Corps helped build the Evans Family Garden on Owen Evans' property at 1383 Mount Olympia Circle. The garden is a cooperative project between the Tahoe Resource Conservation District, Nevada Fire Safe Council, South Tahoe Public Utility District, Lake Valley Fire Protection District, the Evans/Allen families, and local businesses. Learn more about the Evans Family Garden at [www.evansfamilygarden.org](http://www.evansfamilygarden.org).



Photos: Leona Allen



asked him what their value was. It was the first and only time I saw him cry after the fire. He was a stoic person, but he lost it. That was painful," Allen said. "It was his life of work and enjoyment."

Evans, 90 at the time, never rebuilt. He moved in with Allen, whose house was also destroyed by the fire. Instead of rebuilding, Evans said he wanted to "grow a garden and make it really pretty for everybody in the neighborhood."

Allen worked to turn the property into a native plant garden, a community garden, and an educational resource for people to learn about gardening, water conservation, and how to create defensible space to protect homes from forest fires. "He just wanted us to stick to native species and make it so the rest of the neighborhood wants to go there to see the plants, collect seeds, and plant their own gardens," Allen said.

Evans did not live to see the garden take shape. But the garden continues to grow and bloom each year on Mount Olympia Circle.

Thousands have visited the garden, planted and harvested their own plants in the community plots, gathered seeds, and learned more about native plants and their habitats. "It's going like crazy," Allen said. "Dad's love of wildflowers and native plants is living on."

## Surviving the Angora Fire gave growing family confidence they could withstand any hardship

By Jeff DeLong

TAHOE IN DEPTH

Returning from a backpacking trip into Desolation Wilderness, the Erkkilas saw the smoke from afar. That's probably our neighborhood, they said with a laugh.

As they got closer, they realized it really was.

By the time the couple, celebrating their first marriage anniversary, reached their home on Eagle Lane, the Angora Fire was raging full force.

"It was jumping from tree to tree," Emily Erkkila recalls. "None of the houses there were on fire yet but the trees were burning."

Emily quickly packed a box of important documents. Her husband Kyle hosed down the front of the house.



Emily Erkkila

They fled. Sadly, unbeknownst to them, behind a closed door was their roommate's dog. Trapped, it would perish as the home burned to the ground.

"That's the worst part," Erkkila said. "We lost Rocky."

They went to a friend's house and waited for news. "All I had left was my

backpacking stuff. It was like a metaphor," Erkkila said.

The next day, the Erkkilas went to the recreation center, where authorities ranked addresses according to damage level.

"They told us it was the worst. Then we knew the house was totally gone," Erkkila said. "I remember just being in shock. I wasn't crying. I mostly felt surprised. It was like, what do we do now?"

What they did, like others, is move on.

Their insurance company, Erkkila said, "went above and beyond" in covering their losses. She knows some others were not so lucky.

They moved out of state for a time but kept their lot. They returned to South Lake Tahoe in 2011 and two years later, started to rebuild their home.

They live there today with an expanded family — Jonah, 6, and Hazel, 4.

They're a happy family, a busy family. Sure, memories of the fire and the recovery process surface from time to time a decade later, but it's not something to dwell upon.

"It took time but we moved forward. We totally did," said Erkkila, 37.

Erkkila sees the Angora Fire as a milestone in life.

"It was a pivotal moment," Erkkila said. "It was like you know what, we made it through this."

"It gave me the confidence to know we could get through almost anything that came our way."





Photo: Tom Lotshaw



Photo: Tahoe Daily Tribune



Photo: U.S. Forest Service

Residents who lost homes in the Angora Fire (immediate right photo) began cleaning up and rebuilding as soon as they could. They got a helping hand from volunteers and school children who came out to burn areas (right) to help plant trees. Ten years later, the forests are recovering (above) although the burn damage remains a clear reminder of how devastating a wildfire can be.

# ‘Angora Protocols’ helped many rebuild quickly in Meyers

By TOM LOTSHAW  
TAHOE REGIONAL PLANNING AGENCY

Meyers and the South Shore of Lake Tahoe saw a peaceful Sunday turn into calamity when the Angora Fire started burning June 24, 2007. Sparked by an illegal campfire at Seneca Pond, the wind-whipped blaze roared through woods and into neighborhoods. Smoke billowed into a huge plume and ash blanketed the ground. Embers rained down from the sky.

The fire burned 3,100 acres and 254 homes and structures. No human lives were lost. But hundreds of people had to evacuate, some with nothing but the clothes on their back. Many returned to find their homes and their belongings destroyed, their futures uncertain.

If the fire and the aftermath show anything, they show the resilience of the Meyers community, said Norma Santiago, former El Dorado County supervisor. “That’s the best way to put it.”

Ten years later, tears still well up in Santiago’s eyes when she thinks about her first visit to the burn area and the devastation she saw.

The worst areas looked like the surface of the moon: Craters and thick white ash where the homes of displaced friends and constituents once stood. Vehicles melted into streets and driveways. A charred landscape.

Other homes in the burn area were undamaged or only lightly damaged in places where the fire’s intensity was much less severe. Damage was less severe in areas that had defensible space or fire-resistant building materials, or where nearby forest fuel reduction projects had been done.

With so many homes lost and so many people displaced, the Meyers community faced a massive undertaking to regroup and rebuild after the devastating fire.

“In that moment, trying to grab onto what these people who had lost their homes would be facing, I made a commitment to do everything I could to help them rebuild and recover,” Santiago said.

El Dorado County and other government agencies mobilized to get the burned area cleaned up as soon as possible. The “Angora Protocols” that emerged focused on a rapid cleanup done at no charge for the affected homeowners, so roads and properties and hazardous trees could be cleared and people could start rebuilding. All affected homeowners participated.

“Cleanup crews went in and started in mid-July and they were done before the end of August. That is something that is unprecedented in the State of California,” Santiago said.

Meanwhile, the county, nonprofit groups, businesses, residents, and chambers of commerce all mobilized to help victims of the fire. Regular meetings were held to share information and resources. A recovery center coordinated aid and connected people with social services, help finding shelter, and donations of food, clothing, and other assistance. “People wanted to come together and help their neighbors,” Santiago said.

Less than a week after the Angora Fire, residents of Mount Olympia Circle organized a July 4 parade. The fire destroyed nearly all the street’s homes. The parade had been a past tradition, but stopped happening at some point as children grew up and families moved.

“We took the parade back that year and people came from all over to watch. We decorated the whole neighborhood and had a huge picnic on the only green lawn left out there. It was the first day of our healing,” said Leona Allen, who worked for Lake Valley Fire Protection District at the time and now serves on its Board of Directors. Allen also lost her home in the fire.

“Today we still do that. People come from all over to join us. Now there are homes. The only thing still weird to me is to look up and see that burned ridge and think of the way it was with all those green trees.”



Photo: U.S. Forest Service

School children help replant trees while workers rebuild a home burned down in the Angora Fire.

Allen agrees that resilience best describes the Meyers community. “If there’s one word that defines us, it’s that,” she said.

By September 2007, El Dorado County had issued about 10 permits for people to rebuild homes. By the end of October, that total was 25 permits. The county and TRPA waived permitting costs and other fees to help people rebuild.

“My goal was to have the majority of people who lost their homes moved back by the end of 2008, and we had about 75 percent by the end of the year,” Santiago said.

Paula Lambdin and her husband were among the first to move back to Mount Olympia Circle in July 2008. That summer was full of construction. “It was like a child’s construction fantasy, trucks of every size and shape, front-end loaders, cranes,” she said.

But not everyone rebuilt. Some people’s homes were underinsured, uninsured, or between insurers when the fire broke out. The collapse of the economy and the housing market in 2008 didn’t help. Some people are still fighting with insurance companies.

“Not everybody is back here today,” Lambdin said. “Some people couldn’t stay for financial reasons. Other people couldn’t stay for emotional reasons, because it was just too hard to look at that ridge and see all that devastation.”

The burned-out ridge overlooking Meyers with hundreds of standing but dead trees haunts Santiago, too. It is a reminder of the fire, the panic and fear, the hardships, and the long road to recovery for the community and the forest.

“I see a lot of beautiful houses out there. Neighborhoods thriving, people working in their yards. It’s great there are places where the aspen groves have come back, to see the creeks the way they are,” Santiago said. “But seeing those remaining sticks on the ridge gives it that still-kind-of-dead feeling. That’s a constant reminder of the fire.”



Photo: Tahoe Daily Tribune

Immediately after the fire, there were many grim reminders of everything residents had lost, including the pet grave above. By the end of 2008, about 75 percent of those who lost homes were rebuilding or had moved back.



# Fire agencies working together to reduce fire danger

*Blaze fostered uniform strategies for fire safety and forest health on both private and public land*

By Jeff DeLong

TAHOE IN DEPTH

It was a disaster that brought folks together.

Just as South Lake Tahoe's community rallied to support victims of the Angora Fire 10 years ago, the blaze energized activities among the Tahoe Basin's seven fire districts and other public agencies to collaborate on the best ways to prevent a repeat of the disaster in the years ahead.

"The Angora Fire was huge. It not only changed the physical landscape, it also changed the political landscape in the Tahoe Basin," said Chris Anthony, South Tahoe's division chief for Cal Fire.

Perhaps nowhere is that change more clearly demonstrated than in the case of the Tahoe Fire and Fuels Team, established in 2008 and charged with the task of agreeing on policies and steps necessary to reduce fire danger in Tahoe's residential areas and to pursue forest treatment strategies.

Team members include the South Lake Tahoe Fire Department, Lake Valley Fire Protection District, the Fallen Leaf Fire Department, Meeks Bay Fire Protection District, North Tahoe Fire Protection District, North Lake Tahoe Fire Protection District, and the Tahoe Douglas Fire Protection District.

Others include Cal Fire, California Department of Parks and Recreation, California Tahoe Conservancy, Lahontan



Photo: Lake Valley Fire Protection District

*A firefighter maneuvers his truck while fighting the Angora Fire in 2007.*

Regional Water Quality Control Board, Nevada Division of Forestry, Nevada Division of State Lands, Tahoe Regional Planning Agency, Tahoe Resource Conservation District, U.S. Forest Service, and the cooperative extensions from the University of California and University of Nevada, Reno.

While work was already underway on such issues as the need for increased defensible space prior to the Angora Fire, the blaze galvanized those efforts,

said Mike Vollmer, environmental improvement program manager for TRPA. The team's work also helped streamline the permit process for residents to remove trees and create defensible space.

"I would say it's hard to imagine life without it," Vollmer said of the team, which meets roughly on a monthly basis.

"Frankly, people had been working in a vacuum before," Vollmer said. "Everybody is now on board and doing

the same thing. It has created a single, consistent message and that's really valuable."

Team collaboration has increased fire safety across the Tahoe Basin, said Forest Schafer, forester for the North Lake Tahoe Fire Protection District and incident commander of the Tahoe Fire and Fuels Team. Among the improvements are the establishment of uniform codes relating to both vegetation management and construction, Schafer said.

Uniform strategies for fire safety and forest health are necessary on both public and private land and in every jurisdiction, Schafer said.

"It's like a stool that will tip over if you don't have all the legs in place," Schafer said. "My job is to take these concepts and carry them forward so fire-adapted communities and landscapes can truly be achieved."

So how far has Lake Tahoe progressed when it comes to being truly fire adapted?

"We're on our way and moving down the road," Schafer said. "Throughout the basin we're on that path."

"The vision I have is that some day if a wildfire is burning, our communities will be adapted to the point it's no longer a disaster, it's an occurrence that's part of our ecosystem. We're not truly adapted until wildfire is not catastrophic and is just like another big snowstorm in the Sierra."

## *Family that lost home — but not their cat — learned how generous their community could be*

By Jeff DeLong

TAHOE IN DEPTH

Kittycat held on and so did the Yinglings.

When Steve Yingling, his wife Jean, and their two teenage sons, Jordan and Connor, were finally able to return to their home a few days after the Angora Fire blasted through their neighborhood, there was nothing left standing but a scorched chimney.

The family approached and heard a scratching sound. They opened the damper to the chimney and there was the family cat, Kittycat, "holed up," alive and unharmed but for some burned paws.

"It was pretty amazing she survived considering how hot it must have been."

Yingling said. "It was a silver lining in all the bad."

Yingling, then sports editor for the Tahoe Daily Tribune, was driving to work that windy Sunday afternoon when he spied some smoke rising from the woods to the south. Something's burning, he thought. But the fire department will put it out, just like always.

He never made it back. Before long, sheriff's deputies would arrive and tell Jean and the boys to get out and get out fast. They grabbed the family dog and did just that. They couldn't find the cat, which had



Yingling

apparently run off in all the confusion.

They stayed at a motel that first night, anxiously awaiting news of their home off Boulder Mountain Road. The next day they would learn it was gone, along with everything in it. It was a story repeated, in varying ways, more than 250 times.

The Yinglings stayed at rental properties for months after the fire, paying cut-rate rent offered by caring owners. That was just one gesture by a community Yingling said was striking in its kindness to his family and other fire victims. There were fundraisers. Businesses donated clothes and food. People went out of their way to help.

"It was a beautiful thing to see. It kind of took away some of the awfulness,"

Yingling said. "The main thing that came out of it for me was how generous and caring the community could be. I don't know how we could have started over without it."

And start over they did. In 2008, the Yinglings bought a home off Pioneer Trail where they still live today. They still own the lot where their previous home burned to the ground. He thinks one of his sons may build there some day.

Ten years later, the fire can still bring back painful memories. But to Yingling, the most important thing is that his family — like all other victims of the Angora Fire — survived to carry on.

"Life is most important," he said. Kittycat lived until age 20.



# Fat snowpack means skinny beaches

*Abundant winter precipitation fills lake, shrinks shoreline, eases drought*

By Adam Jensen

TAHOE REGIONAL PLANNING AGENCY

Winter may be over, but the heavy snowpack will mean narrower beaches, delayed access to high-elevation hiking and biking trails, and potential flooding.

At the end of March, California Department of Water Resources staff found the equivalent of 45.8 inches of water, 164 percent of the historical average, in the statewide snowpack.

"We still have a very substantial snowpack, particularly in the higher elevations in the central and southern Sierra," said Frank Gehrke, chief of the California Cooperative Snow Surveys Program.

Some areas around Lake Tahoe broke all-time snow-depth records, with Heavenly Mountain Resort reporting 659 inches of snow. A Natural Resources Conservation Service SNOTEL site at Mt. Rose Ski Tahoe in Nevada recorded 194 inches of snow containing the equivalent of 83.7 inches of water in early April. Water content in the snow was 227 percent of the median, an all-time April 1 record.

"In the Lake Tahoe, Truckee, Carson and Walker basins, the 2017 snowpack ranks among the top handful of years, especially, at sites above 8,000 feet elevation," the report said.

Changes to Lake Tahoe are apparent. Stretches of beach widened by five years of drought were narrowed, and streams were



Photo: Drone Promotions

*The bike path outside Tahoe City sits beneath the Truckee River this spring. Officials warn visitors that their favorite beaches may be inaccessible this summer due to the higher water levels.*

swollen to at or above their banks. Piers and boat ramps were inundated again.

Areas with a rocky shoreline may be inaccessible, the U.S. Forest Service said.

"In marshes and wetlands, higher water is pushing the waterfowl nesting habitat toward the edges, and therefore in closer contact with recreationists," said Forest Service Public Affairs Specialist Lisa Herron. "Please avoid these areas and do not allow dogs to enter the marshes or wetlands. This will allow waterfowl to nest without disruption."

The area between the natural rim of Lake Tahoe, at 6,223 feet above sea level, and the maximum legal limit of 6,229.1 feet of elevation acts as a reservoir, with outflows at the Tahoe City Dam controlled by the U.S. District Court Water Master in Reno. The office began spilling water from the dam in February. In April 2016, the lake level hovered around the natural rim. April 2017 saw the biggest rise in water levels in 118 years of record keeping, said Water Master Chad Blanchard.

Sierra snowmelt usually peaks in late

May or early June, but peak flows may come later this year. Temperatures and additional precipitation help determine the runoff peak, and heat waves and rains could increase the risk of flooding as the snow melts.

"Rivers and streams will be running cold, fast, and high this year," Herron said. "Avoid areas that are already flooded, especially if the water is flowing fast, and don't try to cross swift-moving rivers and streams."

Backcountry users should be prepared for snow well into the summer. The Forest Service encourages people to stay on designated roads and trails and avoid wet roads and trails to minimize damage.

Will Tahoe remain full for several years or is this year's high level temporary?

"We'll just have to wait and see,"

Blanchard said.

The large snow year eased drought restrictions in California, but conservation remains important. California Gov. Jerry Brown lifted the state's drought restrictions in most counties in April while continuing water reporting requirements and prohibitions on wasteful practices like watering during or right after rainfall.

Officials are urging continued conservation because weather conditions in the West are highly variable and more precipitation is expected to fall as rain moving forward as climate change drives up temperatures.

"This drought emergency is over, but the next drought could be around the corner," Brown said. "Conservation must remain a way of life."

*Adam Jensen is the environmental education specialist at TRPA.*

## Summer clarity declines while winter shows big improvement

Lake Tahoe clarity levels in 2016 increased in winter and decreased in summer, according to annual readings taken by the University of California, Davis Tahoe Environmental Research Center (TERC).

Readings for summer are attributed to the continuing effects of climate change, researchers at U.C. Davis said. The summer declines were so large that they outweighed the substantially improved winter clarity, which was the best since 2012.

TERC and the Tahoe Regional Planning Agency released the clarity measurement for Lake Tahoe for 2016 in May.

The data show the average annual clarity level for 2016 at 69.2 feet, which is a 3.9-foot decrease from the previous year but still more than 5 feet greater than the lowest recorded average of 64.1 feet in 1997.

The 2016 clarity level is the average of 30 individual readings taken from January through December 2016.

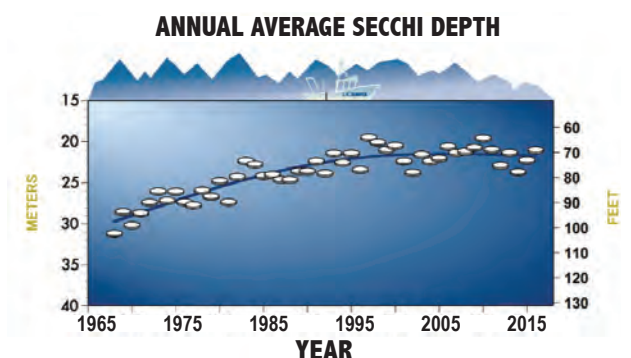
The highest value recorded in 2016 was an astounding 95.1 feet on Jan. 25, and the lowest was 44.3 feet on June 7.

Despite 2016's summer decline, the data record indicates that Lake Tahoe's long-term trend of clarity decline ended about 15 years ago. Since then, clarity has hovered around a value of 71 feet but with sizable inter-annual and seasonal variability.

In addition, Lake Tahoe met its first five-year target for clarity restoration.

In 2011, the Regional Environmental Protection Agency administrator and the governors of California and Nevada signed a commitment to restore the historic clarity of Lake Tahoe over the next 65 years. They also established interim targets to assess our progress toward the goal, 71 feet of clarity by 2016 and 78 feet of clarity by 2026.

The five-year annual average clarity increased to



73 feet in 2016, a 5-foot improvement since 2011 and 2 feet better than the target established by the two states for 2016. Hitting this first milestone is an historic accomplishment.

For more information, visit <http://tahoe.ucdavis.edu> and look for a more detailed recap of the annual State of the Lake report in the next issue of Tahoe In Depth.



## AT-A-GLANCE REGIONAL TRANSPORTATION PLAN

### TRANSIT

- Increase frequency on all main bus routes from every 60 minutes to every 30 minutes.
- Provide free service.
- Link North Shore and South Shore transit systems for a round-the-lake network.
- Improve recreational access by providing transit to popular areas, including Zephyr Cove, Emerald Bay, and Echo Summit.
- Launch a ferry service linking North and South Shores.
- Enhance inter-regional transit services from Sacramento and Reno to Lake Tahoe.
- Extend service to Meyers and expand services to Truckee.

### TRAILS

- Add 25 miles of shared-use paths to existing 127-mile network.

### TECHNOLOGY

- Provide bus-arrival times through personal mobile devices, like smartphones.
- Provide real-time parking availability at high-use recreation sites.
- Improve traffic flow and access for pedestrians and bicyclists on U.S. Highway 50 with optimized signals and intersection designs.

## Travel by the numbers

**10 million**

Number of vehicles traveling to Tahoe each year

**15 million**

Residents living in the Northern California Megalopolis from San Francisco to Sacramento and Reno

**55**

Percent of total daily vehicle trips contributed by Tahoe's 55,000 residential population

**42**

Percent contributed by visitors

**3**

Percent contributed by commuters

# TRPA unveils transportation plan

*Planners encourage biking, walking, and transit through new projects and programs*

By Jim Sloan  
TAHOE IN DEPTH

TRPA has approved a 20-year transportation plan that emphasizes bicycling, walking, transit systems, and technology to protect the lake's fragile beauty and reduce personal vehicle use that contributes to greenhouse gases. TRPA updates the plan every four years.

The plan's goal is to alleviate the worst roadway congestion during times of peak visitation. It focuses on transportation improvements that serve heavily visited recreation sites, because recreation travel makes up more than half of the average daily vehicle trips at Lake Tahoe.

Short- and mid-term goals in the plan focus on continued bike and pedestrian improvements and more frequent and reliable around-the-lake transit service.

Within 20 years, the plan envisions an interconnected system of buses, ferries, bike trails, park-and-ride facilities, and technology advancements that seamlessly move people into and around the Region. At times when Lake Tahoe's constrained roadways are congested, visitors and residents will have a variety of non-auto options to get to destinations.

Here are some highlights:

- A coordinated bus system that not only encircles the lake but also connects with major airports, rail lines, and metro areas. Buses would run frequently and reliably, and, in some cases, would be free to passengers.
- Trails, crosswalks, and bike lanes will connect community centers, neighborhoods, schools, commercial areas, and popular recreation sites, making it easy and safe for visitors and residents to get to such attractions as the Tahoe Rim Trail, restaurants, and shopping.
- Technology will be used to report real-time information on travel times, congestion, and parking availability. There will be incentives for walking, biking, or using transit. This will allow people to use their mobile devices to determine the best way to travel.
- Traffic signals will be optimized to improve traffic flow and allow signal preemption for emergency vehicles



Photo: Rachid Dahmoun/Novus Select

*Roads at Lake Tahoe can become congested around popular attractions, like Emerald Bay.*

and transit, and a network of charging stations will make all-electric vehicles more appealing for drivers.

- Agencies around Tahoe will continue to retrofit roadways with systems to capture and treat stormwater runoff that can wash into the lake and reduce its clarity.
- Rather than expand roadways to handle larger volumes of traffic, the plan calls for agencies to improve the efficiency of Tahoe's roads through transit, trails, technology, and better roadway management, providing non-automotive travel options for residents, commuters, and visitors. "The goal is to entice visitors and residents alike to leave their cars at home," said TRPA senior transportation planner Morgan Beryl.

"A transportation system that promotes walking, biking, public transit use, and environmental innovation technologies such as electric vehicles can help preserve a healthy environment by reducing greenhouse gas emissions," Beryl said.

In the years since the last regional transportation plan in 2012, the agency has addressed everyday travel needs by boosting the availability and use of trails and transit in town centers. This new plan builds on previous initiatives by focusing on recreational travel because it makes up the majority of the daily vehicle trips as residents and visitors flock to popular areas, causing traffic,

congestion, and unsafe roadways.

The plan forecasts that about \$2 billion will be available over the next 23 years for transportation projects within the Tahoe Region. More funding is needed and Tahoe Basin leaders are working on short-term priorities. Implementation of this plan is expected to reduce greenhouse gases from 2005 levels by 8.8 percent by 2020 and by 5 percent by 2035. The smaller reduction in latter years reflects increased visitation as population in areas surrounding Tahoe increases.

Planners hope to see additional environmental benefits as these projects and programs come to fruition.

"Lake clarity is impacted by soil erosion that in part stems from parking along highway shoulders around the lake. Multi-benefit corridor revitalization projects help reduce stormwater runoff, optimize traffic flow, and reduce vehicle dependence by providing safe and convenient ways for people to walk and bike."

While Americans are known for their deep love for the automobile, planners don't think it will be difficult to convince Tahoe residents and visitors to leave their cars in the driveway.

"People visit and live at Lake Tahoe because they like to get outside and recreate," Beryl noted. "Walking and biking are healthy ways of enjoying the outdoors, and enhancing the Tahoe experience."



## Draft environmental report for Highway 50 revitalization

Tahoe Basin leaders have envisioned re-routing Highway 50 in the South Shore's stateline area for more than 30 years. A project proposal to revitalize the area is now up for public review.

The draft environmental report is available online for the Tahoe Transportation District's proposed U.S. 50/South Shore Community Revitalization Project.

The project aims to realign U.S. 50 behind the commercial core at the state line, transforming the existing U.S. 50 thoroughfare for cars into a community gathering place for tourists and residents and a pedestrian- and bicycle-friendly hub.

Major goals for the project are new affordable housing; safer bicycle and pedestrian routes; reduced traffic congestion and neighborhood cut-through traffic; improved transit service; economic redevelopment; and improved air quality and streetscaping.

Released in April for 75 days of comment, the draft report examines five project alternatives, including three alternatives to realign U.S. 50, one alternative to build an elevated pedestrian bridge over U.S. 50, and a no-project alternative.

The proposed project, Alternative B, would realign U.S. 50 near Stateline with four travel lanes along Lake Parkway East behind Harrah's, MontBleu, and the Village Shopping Center, converting the highway corridor through the commercial core into a local "Main Street" with one travel lane for each direction and center left turn pockets.

The draft environmental report is available online at [www.tahoetransportation.org/us50](http://www.tahoetransportation.org/us50). Comments on the draft report are being accepted until 5 p.m. July 7, 2017.

# Electric highway in the sky



## Tahoe-Truckee looking to be plug-in electric vehicle destination

By Jim Sloan  
TAHOE IN DEPTH

A new plan sets out to make the Tahoe Region a leader in the coming transition away from carbon-based fuels and part of the "electric highway" with convenient access to charging station infrastructure that supports plug-in electric vehicle (PEV) use. The goal is to reduce the region's greenhouse gas (GHG) emissions by encouraging visitors and residents to travel more miles using electricity and fewer miles using conventional vehicles.

The California Energy Commission is supporting a partnership between the Tahoe Regional Planning Agency (TRPA) and Truckee-Donner Public Utility District to promote the electrification of transportation.

A cross-regional council with participation from public agencies, utility districts, businesses, and recreation stakeholders is working on this first step toward transformative change. Progress has been made with the release of user-friendly toolkits and an action-oriented readiness plan to strategically deploy PEV infrastructure. This work has expanded, with the commission awarding the partners a second \$104,000 grant to implement the plan.

Climate change from GHG emissions threatens to decrease Tahoe's snowpack

and warm lake temperatures, impacting the health of the region's environment and recreation-based economy. With more than 10 million vehicles driving into the Tahoe Basin each year, transportation has become the second largest source of GHG emissions.

PEVs could transform the region by reducing GHG emissions and vehicle noise and improving air and water quality. When compared to standard cars, PEVs emit up to 70 percent less GHG emissions since they are powered by electricity, which in our region is largely renewable. Renewable energy supplies are expected to increase to meet Nevada's target for utilities to be 25 percent renewable by 2025 and California's target to be 50 percent renewable by 2030. Local planners are implementing projects to meet these ambitious goals. Encouraging travel by bus, bike, or foot, and promoting the use of PEVs are all part of this transportation vision.

The plan shows that the infrastructure to support PEVs can be improved. According to the plan, half of the charging stations lack public access and few workplaces provide them. There are just 35 charging stations in the region and most require several hours to recharge a vehicle. Most charging is done at home, but publicly accessible and workplace charging options are still needed.

This "unplanned deployment" of charging stations has resulted in gaps. "The Tahoe-Truckee Region is a popular destination for visitors and plugging into the 'electric highway' will help us become more sustainable," said TRPA Sustainability Program Coordinator Devin Middlebrook. The project is the groundwork for TRPA to conduct outreach campaigns, identify locations for charging stations, and streamline permitting for new charging stations.

Over the next four years, partners hope to increase the use of electric vehicles in public and private fleets. "We want to make owning an electric vehicle just as convenient as owning a gas vehicle," said Steve Poncelet, public information and conservation manager at Tahoe Donner Public Utility District.

In the process of developing this plan, planners heard common misperceptions about electric vehicles. "Educating people with facts about how owning electric vehicles is practical, green, and safe is an important goal," said Jennifer Cannon, PEV project manager for TRPA. Fact sheets, brochures, and a website are available to better inform consumers.

Visit [www.tahoalternativefuels.com](http://www.tahoalternativefuels.com) to learn more about the Tahoe-Truckee Plug-in Electric Vehicle Readiness and find the right electric vehicle for you.



## New website helps public understand EIP projects

By Jeanne McNamara  
and Damon Knight

At one time or another, all of us have come face-to-face with a neighbor who claims to know all that's going on — that person who possesses all the latest news and gossip. While most of us can agree there is value in being “in-the-know,” relying on word of mouth typically may not provide the best information.

When it comes to learning about the environmental improvement projects that are happening throughout the basin, we have a much better source: The EIP Project Tracker.

Leveraging grant funding from the U.S. Environmental Protection Agency, through the Southern Nevada Public Land Management Act, TRPA worked with Sitka Technology Group and Environmental Incentives to build a website whose No. 1 job is keeping us all up-to-date on the multitude of Environmental Improvement Program-supported projects underway in our community.

In support of this program, created in 1997, over 50 different federal, state, and local agencies, private entities, and the Washoe Tribe work together on projects to restore, improve, and protect the awe-inspiring natural area we call home.

So, the next time you're curious about the workers, trucks, and staging areas down the street or across the lake, grab your laptop, tablet, or smartphone and visit [eip.laketahoeinfo.org](http://eip.laketahoeinfo.org) and get the details from a trusted and dependable source.

What you can discover at [eip.laketahoeinfo.org](http://eip.laketahoeinfo.org):

- Details about local environmental improvement projects
- Maps of projects (completed, under construction, and planned) in your neighborhood
- Before, during, and after photos of projects
- Who is constructing and funding the project
- What the project is accomplishing for the environment and restoration of Tahoe.

*Jeanne McNamara is the principal planning analyst for the Research & Analysis Division of TRPA and Damon Knight is the senior marketing manager for Sitka Technology Group.*

# The revitalization of Tahoe City

*Ice rink, road improvements, new hotel bring big improvements*

By Tom Lotshaw

TAHOE REGIONAL PLANNING AGENCY

Revitalization is gaining traction in Tahoe City. Big improvements are on the horizon, from the installation of a new ice skating rink this winter and the adoption of a new area plan, to approval of the first new hotel project in 50 years and the start of a major road upgrade this summer.

“There’s a lot happening in Tahoe City,” said Cindy Gustafson, general manager of the Tahoe City Public Utility District.

The utility district installed a 50-foot-by-80-foot ice skating rink at Tahoe City Golf Course/Winter Sports Park this winter with help from Placer County, the North Lake Tahoe Resort Association, Truckee Tahoe Airport District, and local organizations.

“Families loved it and we received tremendous response,” Gustafson said.

With the new Tahoe Basin Area Plan, other community improvements in Tahoe City and on the North Shore are expected to continue this summer and in years to come. The area plan is the fourth and the largest to be adopted since the update of TRPA’s Regional Plan in 2012.

Developed over five years and now approved by Placer County and the Tahoe Regional Planning Agency, the plan covers all of Placer County in the Tahoe Basin — about 72 square miles — and includes new incentives and programs to spur environmental-restoration and community-revitalization projects.

One new program allows property owners to build secondary dwelling units, or “mother-in-law units,” regardless of the lot’s size, to provide greater housing options and help address a shortage of affordable housing on the North Shore. The units must be deed-restricted, affordable housing and cannot be vacation rentals.

Another allows limited conversion of development rights. Existing commercial floor area can be converted into the development rights needed for tourist lodging projects. Projects taking advantage of the program must include sidewalks and best management practices to reduce stormwater pollution, and be located in a town center close to transit services.

“We’ve invested many millions of dollars into improvements in North Tahoe,” said Jennifer Merchant, deputy county executive officer for Placer County. “From the Tahoe Basin Area Plan to the Kings



Photo: Drone Promotions

*An aerial photo shows the new ice skating rink in Tahoe City. More improvements are expected in years to come under the new area plan for Placer County portions of the Tahoe Basin.*

Beach improvements, to transit and trails, those dollars are already showing a huge return. The environment and quality of life here are improving, but also — because our investment has laid the groundwork — private investment is showing a renewed interest in redeveloping some of our older, run-down buildings and bringing jobs and new investment into our region.”

The approved Tahoe City Lodge Project exemplifies that private investment.

The 118-unit lodge will redevelop a blighted building at the Tahoe City Golf Course into an energy-efficient hotel with a mix of hotel rooms and one- and two-bedroom suites. Plans include a ground-floor restaurant, rooftop pool and bar, conference facilities, and a new clubhouse for the golf course. The project includes charging stations for electric vehicles, and will reduce land coverage by 10,080 square feet, and restore 1.7 acres of stream environment zone, showcasing how environmental restoration and community revitalization can work together.

Samir Tuma, of Kila Properties, is leading the Tahoe City Lodge project. With all the needed project approvals in place, he’s working to break ground as soon as possible. “It’s a catalyst project, a gateway project for Tahoe City, and will

really highlight all the new redevelopment options available through the area plan,” Tuma said.

Infrastructure improvements are part of the overall revitalization. Tahoe Transportation District and Central Federal Lands Highway Division plan to break ground this summer on the state Route 89/Fanny Bridge Community Revitalization Project, scheduled for completion by summer 2018.

The project will realign state Route 89 and move through-traffic via new roundabouts and a new two-lane bridge across the Truckee River to reduce traffic congestion and conflicts among drivers, bicyclists, and pedestrians.

The new alignment creates an additional emergency egress and ingress route in Tahoe City. The project will reduce stormwater pollution, upgrade an aging sewage export line, and build new bike and pedestrian amenities. The 89-year-old Fanny Bridge will be replaced and the old highway alignment will be upgraded for local traffic, bicyclists, and pedestrians, creating a recreation- and activity-friendly river district for residents and visitors.

The project also includes 2.2 miles of a new shared-use path along the North Shore between Dollar Hill and Tahoe Vista.



# Water Trail signs to help paddlers

*Educational wayfinding signs posted at 10 trailheads around lake*

By **Becky Bell**  
SIERRA BUSINESS COUNCIL

Paddlers on Lake Tahoe will have an easier time safely finding their way on the Lake Tahoe Water Trail this summer.

Sierra Business Council, with funding support from Placer County, Nevada Department of Wildlife, and the City of South Lake Tahoe, will oversee the installation of educational wayfinding interpretive signs at 10 trailheads along the 72-mile water trail.

In 2015, the U.S. Forest Service Lake Tahoe Basin Management Unit, Nevada State Parks, California State Parks, California Tahoe Conservancy, Tahoe City Public Utility District, and the City of South Lake Tahoe agreed to develop the educational water trailhead system for 20 designated public launch and landing sites with facilities to address the needs of paddlers.

The signs being installed this summer are designed to help paddlers have a safe and enjoyable experience. The signs feature vital water safety and weather information, aquatic invasive species prevention tips, and a mapped paddle route with GPS coordinates, campgrounds, and public launch/landing sites.

“We are very proud to be part of this regional collaborative effort for the past decade, and to see the signage installed this summer,” said Jan Brisco, executive director of Tahoe Lakefront Owners’ Association. “We may never know, but it will be worth it if we can save even one life.”

Water trail signage has long been a priority for improved public lake access. In 2011, public/private stakeholders expanded the signage purpose to enhance the user experience by improving water safety, wayfinding, reducing user conflicts, and encouraging resource stewardship and aquatic invasive species prevention.

Water trail users can embark on day trips or longer overnight trips. The trail traces the perimeter of the lake and offers both campgrounds and shoreline lodging along its route. Finding overnight parking at launch sites can be difficult, so paddlers are encouraged to make arrangements with



Photo: Corey Rich/Aurora Photos

*A kayaker heads out on the water trail from Sand Harbor for an evening paddle.*

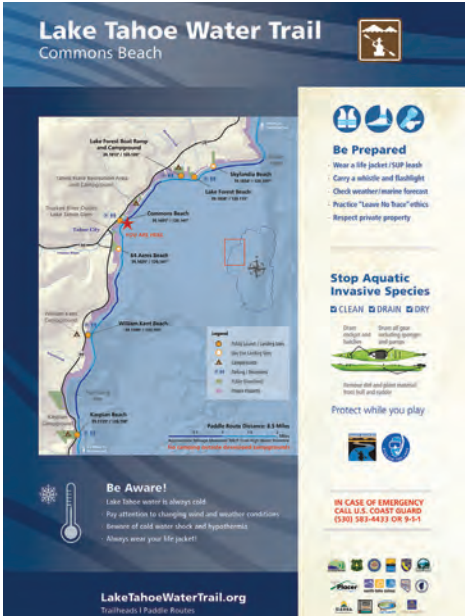
operators at the various launch sites around the lake. The best time to take a multi-day trip is in late September and October, when the weather is still warm but crowds have thinned out at campgrounds and lodges.

Paddlers are asked to be the first line of defense to keep Lake Tahoe’s waters pristine and clear. Arrive at Lake Tahoe with crafts “clean, drained, and dry” in order to prevent the spread of aquatic invasive species. Paddlers who have previously launched in infested waters

should have their boats inspected free of charge at one of the four Tahoe boat inspection stations in Meyers, Alpine Meadows, Truckee, and Spooner Summit.

The easiest way to access the Lake Tahoe Water Trail is at developed public beaches with adequate parking and restrooms. Water safety tips and maps of public launch and landing sites are available at [laketahowatertrail.org](http://laketahowatertrail.org).

*Becky Bell is the Sierra Business Council’s project manager for the Lake Tahoe Water Trail.*



*One of the new water trail signs.*

## Planning a trip

The new signs along the Lake Tahoe Water Trail will be installed at:

- William Kent Beach and Campground
- Commons Beach
- Lake Forest Boat Ramp and Campground
- Carnelian Bay/Watermans Landing
- Tahoe Vista Recreation Area & boat launch
- North Tahoe Beach
- Sand Harbor Nevada State Park
- Cave Rock Nevada State Park
- El Dorado Beach/Lakeview Commons
- Regan Beach

Multi-day trips on the water trail demand careful planning, and self-rescue and cold water survival skills to handle Lake Tahoe’s intense conditions. The entire trip is approximately 72 miles and no legal overnight camping is allowed between the Lake Forest Campground at Pomin Park on the northwest shore and Zephyr Cove Resort on the southeast shore – a paddle distance of approximately 35 miles. The Lake Tahoe Water Trail website recommends a circumnavigation beginning and ending at Sand Harbor Nevada State Park. Paddling either west or south from that point requires a 15-plus mile day to the nearest campground. Paddling with a stay at a lakeside lodge can reduce this distance.

No overnight parking is allowed at public beaches, public side streets, or highways. Outside of peak visitation periods, many lakeside hotels allow you to leave a car for a few days at their site if you start your trip with an overnight stay. Some public campgrounds can accommodate a limited amount of overnight parking as well. Always make arrangements in advance. Check weather and marine forecasts, carry a whistle and flashlight, and always wear your life jacket and SUP leash.



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What readers are saying:

*Thank you for publishing a very informative paper. My brother and I are older and have been coming to Tahoe since 1950, the paper keeps us current on what’s happening in Tahoe.*

- D.M. Roseville, CA





Protecting, Enjoying & Exploring the Lake Tahoe Basin

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## Angora helped researchers better understand effects of fire

Continued from page 5

and phosphorus that followed the fire. Lake Tahoe was largely spared, however, thanks to the lack of heavy rainfall, a nearby wet meadow that filtered runoff, and the forest managers who stabilized burn-area soils.

The fire affected stream insects, and these effects extended to areas downstream of the burned area. The fire also prompted a pulse of microscopic black carbon into local streams and ultimately Lake Tahoe, but University of Nevada, Reno researchers showed that black carbon was rapidly and unexpectedly degraded in the lake.

The hydrological effects of the fire on Tahoe were less than feared, but the heavy atmospheric inputs of nutrients during the fire changed the balance of nitrogen and phosphorus, which in turn had a major effect on the size of plankton in the lake. An international research group showed that very small plankton dominate the water column under these conditions.

The Jeffrey pine and mixed conifer forests that historically dominated the Lake Tahoe Basin were adapted to frequent, low-severity fire, characterized by many large, fire-tolerant trees and open stands. But Comstock-era clearcutting and subsequent fire suppression left highly dense stands of small to medium-sized, fire-intolerant species. Consequently, when fires burn, they burn hot and they often kill many trees.

One study found that pre-fire forest treatments greatly increase forest resilience to fire. Researchers also found that plant diversity was best promoted by low- and moderate-severity fires, which are more likely to occur in areas where fuels have been reduced by land managers.

Another study showed the highest seedling densities in areas of moderately severe fires, with hotter fires benefitting pines. High-severity burn areas supported fewer seedlings than unburned forests.

Another team of researchers found that high severity fire was important to the maintenance of certain birds, and that wholesale removal of dead trees after fire was detrimental to them. Finally, another study showed that forest litter clearings, found around trees that are inhabited and partially maintained by ants, helped to reduce tree damage by fire in areas of low-severity burning. This tended to occur where managers had previously thinned the forest and carried out prescribed burns.

*Hugh Safford is a regional ecologist for the USDA Forest Service, Pacific Southwest Region.*

# 'Flushable' wipes clog sewer system



Photos: TCPUD

Most sewage spills are preventable, caused by misuse of the sewage system, including flushing materials like 'flushable' wipes that don't break down. Wipes and other materials — such as feminine products — collect in sewer system pumps and cause them to malfunction.

## Sewage backups caused by certain products pose threat to Tahoe

By Kurt Althof

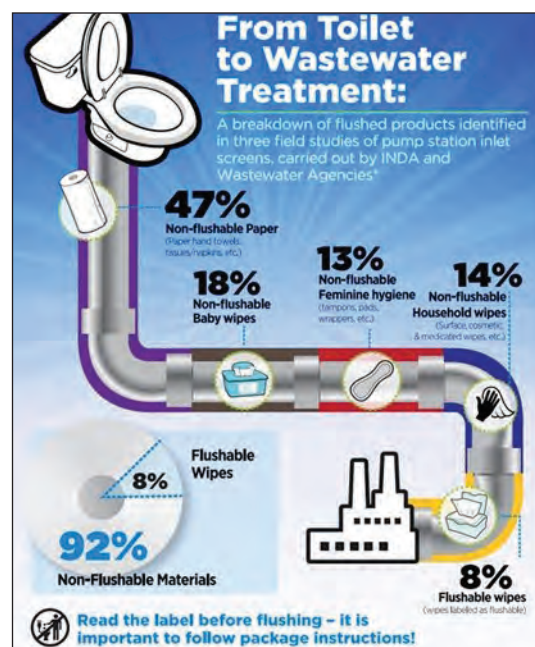
TAHOE CITY PUBLIC UTILITY DISTRICT

Although the sewer systems around Lake Tahoe are all carefully engineered and designed to export waste from the Tahoe Basin, the complex process can be dramatically affected when certain materials are flushed down the toilet.

These materials include so-called "flushable wipes," paper towels, cotton swabs, feminine hygiene products, condoms, facial tissues (Kleenex), dental floss, or anything other than toilet paper and human waste.

In fact, toilet paper is the only "product" that is designed to break down quickly and pass harmlessly through the sewer system. The sewer system is not designed to be a garbage disposal and the consequences of using it that way are sometimes harmful, particularly in such an environmentally sensitive area as Lake Tahoe.

There is nothing pleasant about a sewer backup, but a sewer backup in your home is not only stomach churning, it can also be costly and a significant health concern. If that sewer backup makes its way into Lake Tahoe, or any part of the environment, it creates significant challenges and harm.



Most of the time a sewer "spill" is preventable and caused by the misuse of the sewer system.

The sewer system's No. 1 enemy is the misnamed "flushable wipe." Many wipe products are marketed as "flushable," and although they do go down the toilet, they cause tens of thousands of dollars in damage and numerous sewer back-ups each year. To make matters worse, the concept of flushable wipes has established a perception that wipes in general are flushable and subtly

encourages customers to flush any and all wipes.

Although makers of these so-called "flushable wipes" contend their products break down appropriately in the sewer system, test after test proves this is not the case.

When you or your neighbors flush non-flushable items, the risk of a sewer backup increases significantly, not only in the lateral that connects your house to the main, but in the main system and in sewer pumps. Regular routine maintenance and inspections of sewer mains are performed throughout the region, but this cannot catch every problem before it causes a backup and damages homes, businesses, and the environment.

The best approach is to keep it simple: nothing but human waste and toilet paper should go down the toilet. Flushing anything else will damage your household plumbing, the environment, and the wastewater system.

Help Keep Tahoe Blue and your home undamaged: Don't flush the wipes!

*Kurt Althof is the grants and community information administrator for the Tahoe City Public Utility District.*





A rare Swainson's thrush before being outfitted with a tracking device.

## Once abundant, thrush now has scientists studying its secret travels

By Jim Sloan

TAHOE IN DEPTH

In 2009, Will Richardson was doing some summertime bird-monitoring research in aspen stands in Ward Canyon near Lake Tahoe when he heard an unexpected birdsong.

It was a high, pleasing, spiraling song, like a flute, and he recognized it right away as the song of a Swainson's thrush, a bird that had all but disappeared from Tahoe and the Sierra south of Yuba Pass.

He heard one bird singing and then he heard others responding. To his astonishment, he realized that there was a small colony of the elusive bird.

"It floored me," said Richardson, the executive director of the Tahoe Institute for Natural Science. "I always expected to see them and always wondered why they were never there. So, it was pretty thrilling to find a pocket of survivors."

Richardson had studied thrushes in Vermont and Canada years before and had earned his doctorate in Ecology, Evolution and Conservation Biology from the University of Nevada, Reno, by studying bird communities in Sierra aspen habitats. He knew that Swainson's thrushes had been common at Tahoe years ago and that their disappearance from Tahoe and other areas of the Sierra was considered "one of the unresolved



Robin Jones Mygatt holds a thrush during target netting in July 2014.

mysteries of Sierra Nevada ornithology."

He decided to investigate. He wanted to find out if the birds were declining, stabilizing, or rebounding in the Tahoe Region.

He knew that Tahoe had plenty of habitat to attract the bird, which favors aspen forests and dense, riparian thickets. So, to explain its small numbers, he reasoned that he would need to learn if the bird's wintertime habitat had changed in a way that affected its resiliency.

That meant capturing birds twice. First he had to catch some and attach a tiny tracking device. Then, the next year, he had to catch the banded birds a second time to retrieve the data.

Not a simple proposition.

Although Swainson's thrush has

an estimated global breeding population of 100 million birds, the species has lost 38 percent of its numbers since 1966, according to the Cornell Lab of Ornithology. The bird breeds in the north and migrates in fall to Mexico, Central America, and northern South America. Birds from the majority of the United States and Canada winter in South America while the Pacific Coast population migrates to Mexico and Central America.

According to researchers at Cornell, Swainson's thrush is particularly sensitive to such breeding habitat problems as grazing, development, human activity, and nonnative invasive plants. Migrating Swainson's thrushes are killed — in greater numbers than any other bird species — by collisions with windows, radio and cellphone towers, and tall buildings.

In 2014 and 2015, with financial support from the Sierra Foothill and Sacramento Audubon Society chapters, TINS and colleagues at the Point Reyes Bird Observatory captured more than three dozen thrushes from Ward Canyon, Strawberry Creek, and Plumas County locations and equipped them with one of two different tracking devices.

In subsequent summers, the team

Continued on page 27



Will Richardson of the Tahoe Institute for Natural Science examines a female Western tanager.

## Secret to scientific success: Know how to pick a fight

To capture Swainson's thrushes for his study, Will Richardson of the Tahoe Institute of Natural Science said he "basically picks a fight with the bird."

He sets up nets in a bird's known territory and plants decoy thrush in a tree. Then he sneaks off a short distance and plays a sound of the Swainson's thrush's spiraling woodwind song. Other thrushes, intent on protecting their territory, swoop in to drive off the invaders. Some get caught in the net. Richardson removes them, takes measurements, attaches leg bands and the tracking device, and releases them. The next summer he plays the same trick and tries to recapture the same birds.

"You basically need to catch the same bird twice, and that's not easy when you consider how few birds there are to begin with," Richardson said.

While he's not sharing the location of his Ward Canyon site, Richardson said birdwatchers can find Swainson's thrushes along Strawberry Creek just below the Lover's Leap trailhead (off U.S. Highway 50 west of Strawberry Lodge), along General Creek at Sugar Pine Point State Park, and along the Upper Truckee River near Hawley Grade south of Christmas Valley.

Swainson's thrushes are more likely to be heard than seen. Their song has a "ventriloquial quality" that makes them difficult to track. They also fly around quickly, and sometimes they use a quiet song that sounds like it's farther away than it actually is.



The decoy Richardson made to capture live thrushes.



# Agency honors those helping communities

*TRPA recognizes four Spirit Award winners for their work on Lake Tahoe environmental issues*

The Tahoe Regional Planning Agency has honored four people for their commitment in protecting Lake Tahoe.

The Lake Spirit Award winners have done everything from helping protect Lake Tahoe from wildfire and aquatic invasive species to promoting alternative transportation and more sustainable communities.

Awards are given to individuals from both the North and South Shores of Tahoe.

This year's winners:

## North Shore citizen: Karen Mullen-Ehly

Mullen-Ehly retired from a career with Washoe County Parks to bring her "get-it-done" attitude to numerous projects at Lake Tahoe, according to Tahoe Fund CEO Amy Berry, who nominated Mullen-Ehly.

"In her role as a consultant to the Tahoe Transportation District, she has been instrumental in moving the Nevada Stateline-Stateline bike path forward," Berry said. "She has poured her heart and soul into the project.

"She is often pointing out little ways to make a project exceptional that don't require significant funding, just significant thought."

## South Shore citizen: Karen Fink

Fink was a founding member of the Lake Tahoe Bicycle Coalition, and works on improving transportation, biking, and affordable housing at Lake Tahoe. She inspired the

parents' groups Small World to engage busy parents in creating a more peaceful, sustainable planet for children, said nominator Rebecca Bryson.

"As a long-time employee at TRPA, Karen worked tirelessly to promote a more sustainable transportation system for a better environment here in Tahoe," Bryson said. "Her warm, collaborative spirit and can-do attitude enabled her to work with a wide variety of interest groups to get things accomplished."

## North Shore agency representative/environmental scientist: Forest Schafer

Schafer has worked for the North Lake Tahoe Fire Protection District since 2003. He is the incident commander of the Tahoe Fire and Fuels Team, which coordinates fuel reduction, fire prevention, and community engagement for 18 entities in the Lake Tahoe Basin.

"Forest has cultivated relationships and fostered creative, collaborative solutions to issues that affect not only the Tahoe Basin but our regional resources as well when it comes to fuels management and mitigation," wrote Tia Rancourt of the North Lake Tahoe Fire Protection District.

## South Shore Agency Representative/Environmental Scientist: Nicole Cartwright

Cartwright has been a part of Lake Tahoe's Aquatic Invasive Species Program since it began in 2007 and has



Photo: Adam Jensen, Tahoe Regional Planning Agency

TRPA Executive Director Joanne Marchetta, left, and TRPA Governing Board Chair James Lawrence, far right, presented Lake Spirit Awards to, from left, Forest Schafer, Karen Mullen-Ehly and Karen Fink. Nicole Cartwright was also honored but could not be at the presentation ceremony.

helped build it from a volunteer program into the "gold standard for prevention," according to TRPA Aquatic Resources Program Manager Dennis Zabaglo.

"Nicole also oversees projects designed to remove existing AIS within the lake, highlighted by the Emerald Bay project that has resulted in Emerald Bay being weed free for the last several years," Zabaglo said.

## Washoe tribe's land-use practices helped keep Tahoe's natural ecosystems productive and in balance

By Helen Fillmore

While the heavy winter at the lake this year may have some people ready for spring, it may also have some people wondering how the original people of these lands were able to survive these conditions without all the modern conveniences of four-wheel-drive vehicles and grocery stores.

The Washishiw (Washoe people) have lived and used the lands in and around Lake Tahoe for thousands of years. Our traditional homes, food sources, and ancient land-use practices have allowed the Washoe to live in extreme climate variability over time. Also important to our resilience is the ability to bring ancient ideologies forward with the changing times.

The Washoe people were once a part of the natural ecosystem at Lake Tahoe. In the Washoe language, to say that you are from somewhere, you might say, "Ditde'i le'i," which actually translates to mean, "the land, I am." Their connection to Lake Tahoe is much deeper than an appreciation for its beauty.

Their land-use practices such as hunting and fishing, and their material and plant harvesting helped keep ecosystems healthy. Because young willows were prioritized for basket materials, the Washoe people would

manage streams for young willow through regular trimming or burning. These actions prevent willows from overgrowing along riparian systems.

This example is one of the many stewardship practices used by the Washoe people to care for the Tahoe Basin.

Using traditional knowledge in contemporary practices can be challenging. Throughout the year, Washoe community members work hard to develop educational programs about Washoe cultural beliefs, value systems, and traditional practices.

There are many opportunities to mimic and reintegrate traditional practices for the health of the basin as a whole; however, there are increasing barriers that prevent Washoe people from being able to use their homelands in ways that their ancestors once did.

In addition to more limited access, the lands and ecosystems surrounding Lake Tahoe continue to change. We all face challenges trying to ensure the protection of Lake Tahoe and its beauty for future generations, but the changes that degrade the ecosystems make it even more challenging to hold onto the spiritual and cultural practices that make the Washoe people so unique.

*Helen Fillmore is a Washoe descendant and masters student in hydrologic sciences at the University of Nevada, Reno.*

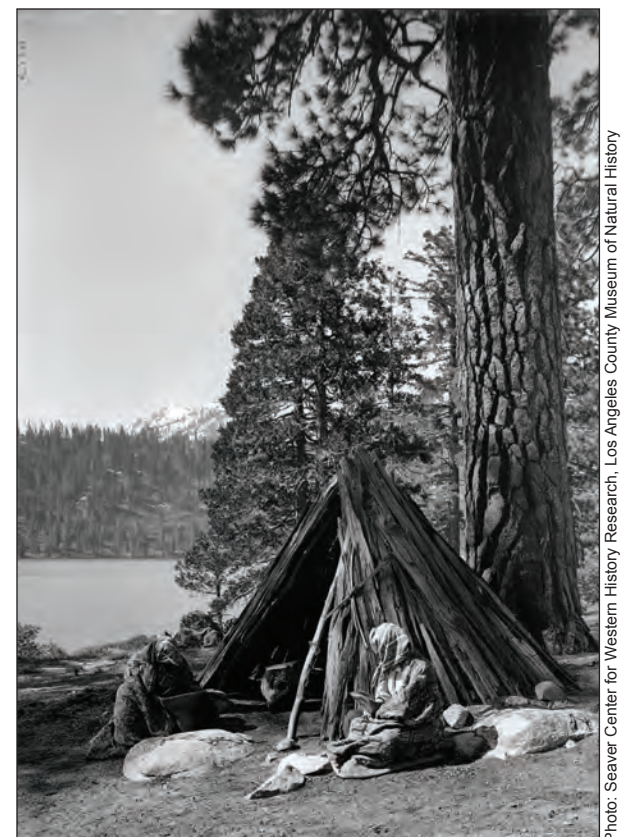


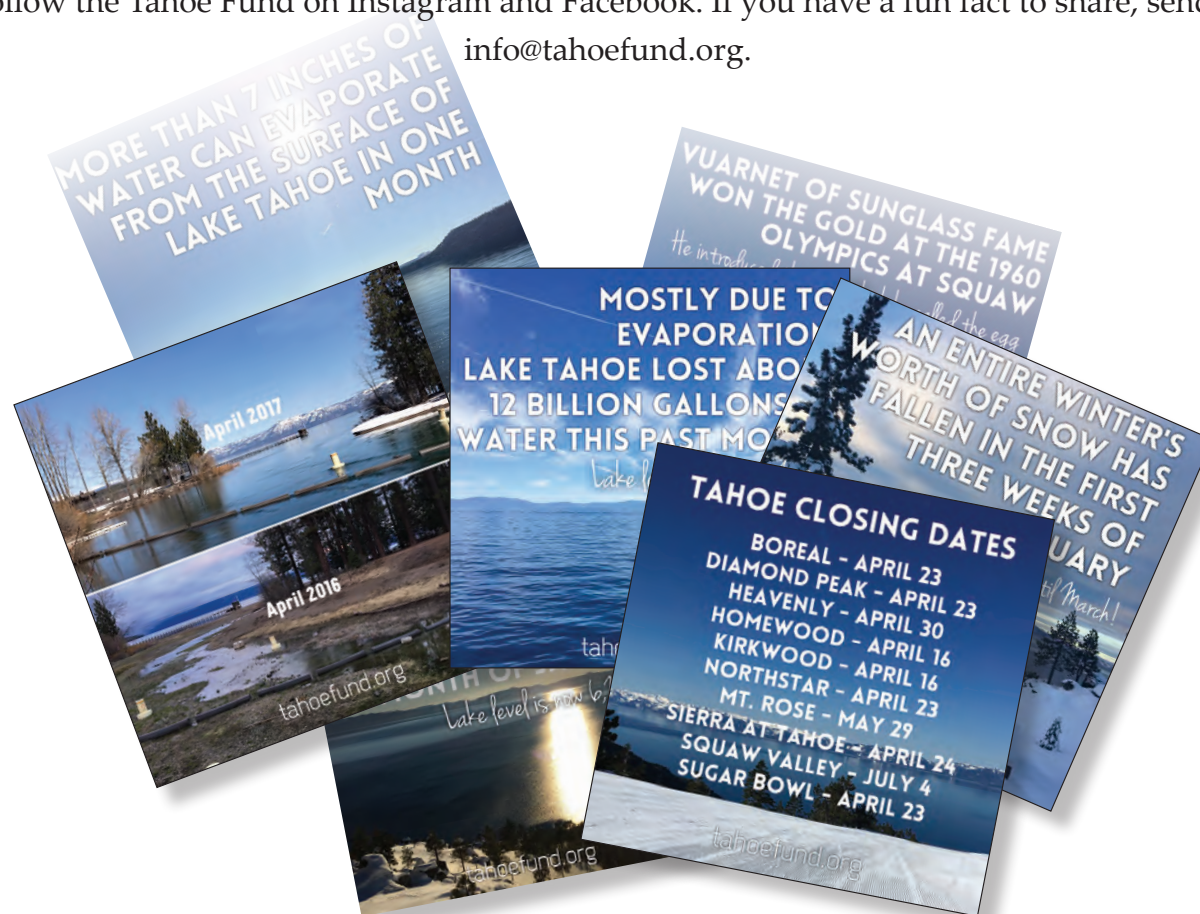
Photo: Seaver Center for Western History Research, Los Angeles County Museum of Natural History

Washoe women sit in front of bark slab house at Lake Tahoe in 1908.



# An easy way to be in the know at Lake Tahoe

Ever wonder how much water that last storm added to Tahoe? Which mountain peak is the highest? How the snowpack compares to other years? The Tahoe Fund, a local nonprofit dedicated to preserving the Tahoe environment, has a fun way to stay in the know. Every Thursday they publish a new Fun Fact. You can sign up for their emails at [www.tahoeFund.org](http://www.tahoeFund.org) or follow the Tahoe Fund on Instagram and Facebook. If you have a fun fact to share, send it to [info@tahoeFund.org](mailto:info@tahoeFund.org).



## Lawmakers name highway after fallen firefighter; family seeks help with signage

California lawmakers have designated a portion of U.S Highway 50 from Mount Ralston Road to Echo Summit as the Firefighter Michael "Mikey" Hallenbeck Memorial Highway.



Hallenbeck, a 21-year-old ski lift operator and wildland firefighter, died while fighting the Sierra Fire in August 2015.

"He was taken from us too soon and it is only

appropriate to honor Mikey by naming this portion of the First Senate District on Highway 50 in his memory," said Sen. Ted Gaines (R-El Dorado).

The Hallenbeck family hopes to raise \$9,000 toward the highway memorial signs. To contribute to the production and installation of the signs, Tahoe Fund is collecting donations for the family. Tahoe Fund is a 501(c)(3) nonprofit incorporated in California and registered in Nevada, all donations are tax deductible.

To donate, please go to [www.tahoeFund.org](http://www.tahoeFund.org). After choosing "Donate Now," select "I would like to make a donation to a project" in the drop down list, then select "Mikey Hallenbeck Memorial."

"Mikey loved the tranquil beauty and year-round recreation in the Sierra and Lake Tahoe," said Kirby and Toni Hallenbeck, Michael's parents. "A highway memorial where Mikey lived, worked, and played is fitting tribute, and a great opportunity for the community to join his friends and family in remembering his sacrifice. Please help make this tribute a reality."

## Thrush study aims to find out why bird becoming scarce at Tahoe

Continued on page 27

recaptured 15 of the 46 originally tagged birds. What they have learned has surprised them.

The Tahoe birds from Ward Canyon and Strawberry Creek were not migrating to Mexico, as Richardson had theorized, but were joining eastern birds for a trip to northern South America. The Plumas County birds, meanwhile, were "bopping all over the place," with some making their way to Central America. One Swainson's thrush from the Quincy area spent the winter in balmy Panama.

The conclusion? It's too early for solid theories yet, Richardson said. His colleagues are still breaking down the data collected from the tracking devices, and another

colleague from U.C. Santa Cruz is doing genetic tests on feathers from the captured birds.

Richardson hopes that additional data will shed some light on the habits of the Swainson's thrushes spending their summers at Tahoe. He also plans to monitor the thrushes' nests to determine how many young they produce at places like Ward Canyon. It will be a few more years before any solid theories emerge.

In the meantime, he's encouraged.

"It's great to know these birds are coming back to the same location each year," he said. "They are producing young here, and that's also encouraging. We know babies are produced, but whether there are enough young to sustain the population still isn't clear."



A thrush with leg bands showing it's part of a study.



# Tahoe Region summer road projects underway

Road projects planned for the Tahoe Basin this summer include building 10 storm drain collection areas with more than 120 inlets and paved shoulders designed to collect stormwater runoff and filter out the dirt, oil, and litter before it reaches the lake.

These stormwater projects are part of the Environmental Improvement Program and are expected to affect almost every mile of the highways system in the basin, according to Caltrans.



- 1

**What:** Drainage improvements, road widening, paving, permanent striping, and sign installations on state Route 89

**Distance:** 8.2 miles

**Cost:** \$70.1 million

**When:** May–July

**Delays:** Up to 20 minutes
- 2

**What:** Realignment and replacement of Truckee River “Fanny Bridge,” construction of three roundabouts, streetscape, and drainage improvements on state Route 89, and multi-use path work

**Distance:** 1.5 miles

**Cost:** \$35 million

**When:** May–October

**Delays:** Up to 20 minutes
- 3

**What:** Multi-use path and drainage improvements, state Route 89, from Sugar Pine Point State Park to Meeks Bay Resort

**Distance:** 0.2 miles

**When:** July–October

**Delays:** Up to 30 minutes
- 4

**What:** Drainage improvements, road widening, sidewalk construction, and paving, U.S. Highway 50 in South Lake Tahoe from the “Y” to Trout Creek Bridge

**Distance:** 1.9 miles

**Cost:** \$56 million

**When:** May–October

**Delays:** Up to 20 minutes
- 5

**What:** Pedestrian safety enhancements on U.S. Highway 50 at Lakeshore Boulevard

**When:** September–October

**Delays:** Up to 20 minutes
- 6

**What:** Slope stabilization and erosion control, U.S. Highway 50 near Logan Shoals

**Distance:** 2 miles

**When:** May–October

**Delays:** Up to 20 minutes
- 7

**What:** Water quality and safety enhancements and multi-use path from Sand Harbor to Incline Village along state Route 28.

**Distance:** 11.3 miles

**When:** May–October

**Delays:** Up to 20 minutes
- 8

**What:** Drainage repairs on state Route 207 Kingsbury Grade from summit of Daggett Pass to state Route 206.

**Distance:** 7.3 miles

**When:** April–October

**Delays:** Up to 20 minutes
- 9

**What:** Emergency pavement removal, pavement grinding, pavement rehabilitation, polyester concrete, joint seals, and striping on Interstate 80

**Distance:** 11 miles

**When:** March–October

**Delays:** Up to 20 minutes